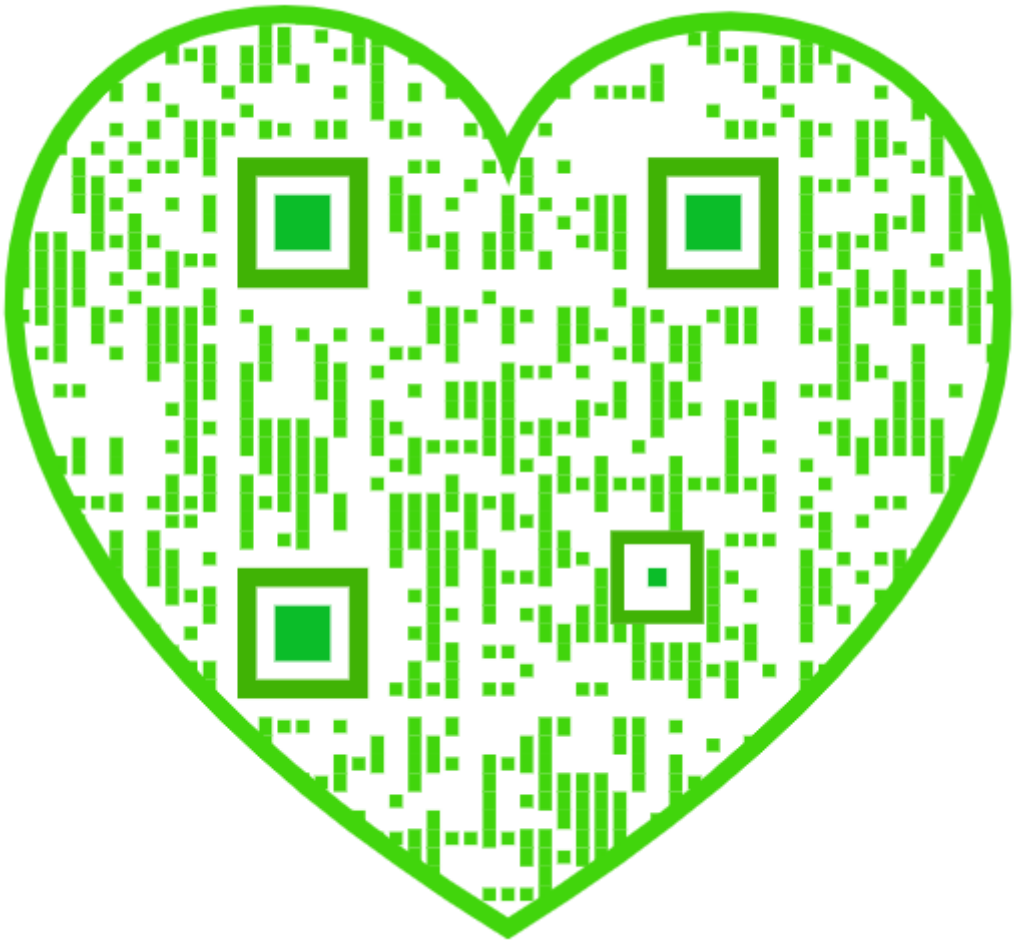


THE GEOGRAPHY OF ILLINOIS

By J. Paul Goode, *Assistant Professor of Geography, the University of Chicago*

ILLINOIS AS A WHOLE

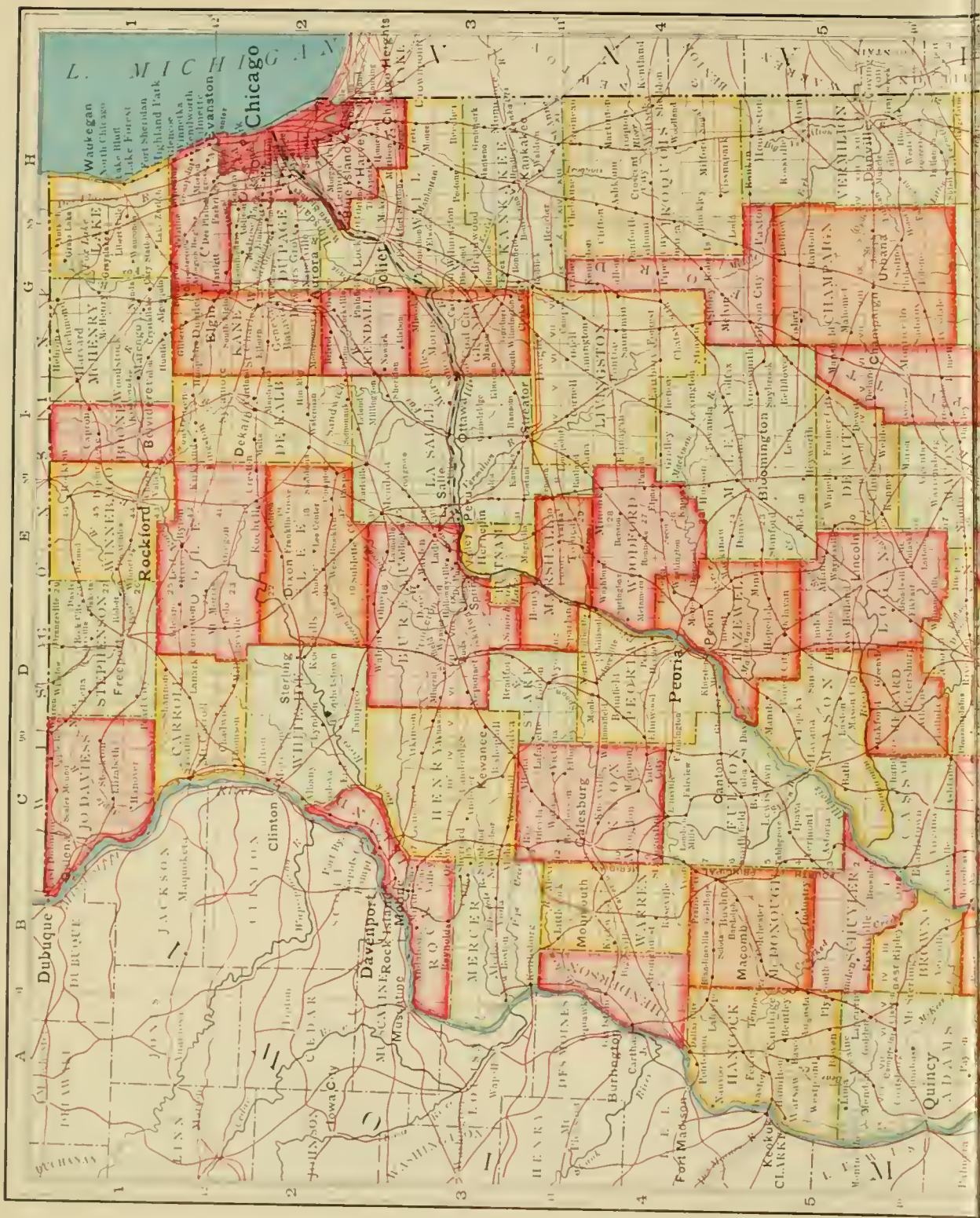
Location. The state of Illinois lies almost in the heart of the North American continent. It is in the very middle of the Great Central Plain, hence it has no barrier on any side. It is remote from the sea, hence it has a characteristic continental climate. Its borders are washed by the navigable waters of the two largest rivers on the continent, hence commerce is invited. How it came by its land surface, its fertile soil, its rich mineral wealth, and how all these have shaped the course of human history within its borders, is the story which the geography of Illinois has to tell.

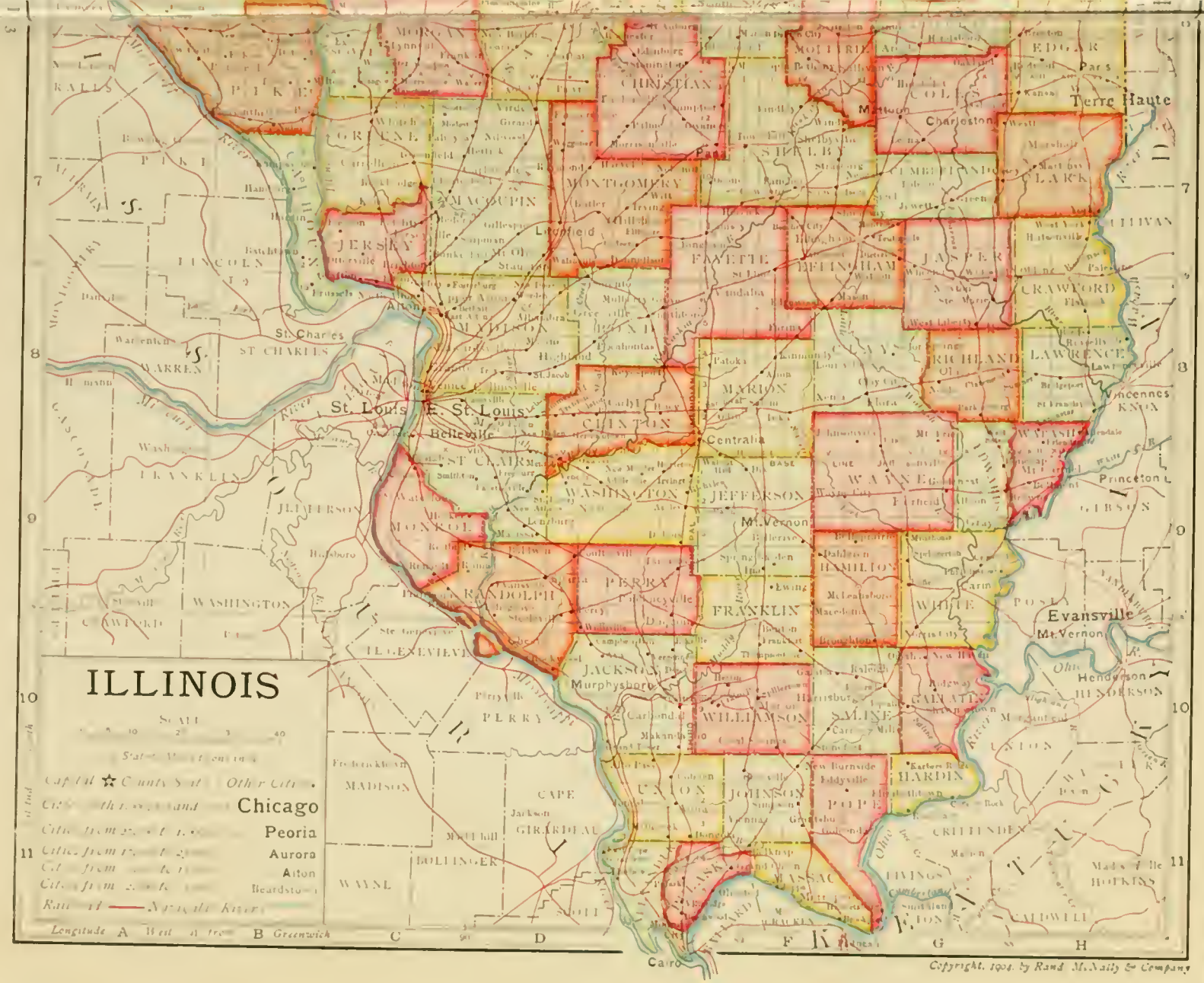
Fig. 1. *A relief map of Illinois.*

Size. The most southern point of the "Prairie State" lies in the Mississippi River at 30 degrees 50 minutes north latitude; its northern boundary, 385 miles farther north, is on the parallel of 42 degrees 30 minutes, a line adopted purposely to bring the port of Chicago well within the state. Its most eastern margin is on the meridian of 87 degrees 35 minutes west, from which line the state extends westward 218 miles, to the outer edge of Adams County on the Mississippi River in 91 degrees 40 minutes west longitude. This gives Illinois an area of 56,650 square miles, of which 650 square miles are water.

Surface. The surface of Illinois is very flat. From a mean river level of 267 feet above the sea at Cairo, the land rises gradually to its highest points in Jo Daviess and Stephenson counties, where

Fig. 2. *Harvesting [illegible] near Aurora*


L. MICHIGAN
Chicago
Evanston
Waukegan
Aurora
Joliet
Elgin
Rockford
Dixon
Sterling
Ottawa
Streator
La Salle
Peru
Bloomington
Kankakee
Danville
Champaign
Urbana
Peoria
Galesburg
Canton
Macomb
Monmouth
Quincy
Clinton
Davenport
Rock Island
Moline
Dubuque
Burlington
Fort Madison
Keokuk
Iowa City
Lincoln
Decatur
Pontiac
Watseka
Kewanee
Mendota
Sycamore
DeKalb
Freeport
Galena
Jacksonville
Springfield
Mattoon
Effingham
Centralia
Carlinville
Alton
Edwardsville
Belleville
Mt. Vernon
Olney
Robinson
Lawrenceville
Flora
Carmi
Harrisburg
Metropolis
Cairo
Shawneetown
Golconda
Vienna
Anna
Cobden
Chester
Sparta
Nashville
Pinckneyville
Du Quoin
Benton
Carbondale
Murphysboro
Herrin
Marion
Mt. Carmel
Fairfield
Salem
Vandalia
Greenville
Hillsboro
Litchfield
Pana
Taylorville
Shelbyville
Paris
Charleston
Mattoon
Tuscola
Arthur
Sullivan
Monticello
Clinton
Decatur
Lincoln
Mt. Pulaski
Petersburg
Virginia
Beardstown
Havana
Lewistown
Canton
Pekin
Morton
Washington
Metamora
Eureka
Roanoke
Gridley
Fairbury
Chenoa
Lexington
Normal
Bloomington
Wenona
Ottawa
Marseilles
Morris
Joliet
Lockport
Plainfield
Naperville
Wheaton
Elmhurst
Oak Park
Cicero
Evanston
Highland Park
Waukegan
North Chicago
Lake Bluff
Lake Forest
Fort Sheridan
Winnetka
Glencoe
Kenilworth
Wilmette
Skokie
Niles
Morton Grove
Des Plaines
Maine
Park Ridge
Norridge
Harwood Heights
Chicago Heights
Kankakee
Bradley
Momence
Watseka
Iroquois
Onarga
Gilman
Rantoul
Tolono
Villa Grove
Arcola
Tuscola
Sullivan
Mattoon
Charleston
Paris
Marshall
Casey
Clay City
Flora
Clay
Richland
Olney
Lawrence
Crawford
Jasper
Cumberland
Clark
Edgar
Vermilion
Iroquois
Ford
Livingston
Logan
Mason
Tazewell
Woodford
McLean
DeWitt
Piatt
Champaign
Douglas
Coles
Moultrie
Shelby
Cumberland
Clark
Edgar
Christian
Montgomery
Macoupin
Madison
Bond
Fayette
Effingham
Jasper
Crawford
Clay
Wayne
Edwards
Wabash
White
Hamilton
Franklin
Jefferson
Marion
Clinton
St. Clair
Monroe
Randolph
Perry
Washington
Jackson
Union
Alexander
Pulaski
Massac
Johnson
Pope
Hardin
Gallatin
Saline
Williamson
Franklin
Jefferson
Wayne
Hamilton
White
Edwards
Wabash
Richland
Lawrence
Crawford
Jasper
Clay
Effingham
Fayette
Montgomery
Macoupin
Madison
Bond


ILLINOIS
Chicago
Peoria
Aurora
Alton
Beardstown
St. Louis
E. St. Louis
Belleville
Centralia
Mt. Vernon
Terre Haute
Charleston
Evansville
Mt. Vernon
Henderson
Princeton
Vincennes
Cairo
Murphysboro
Carbondale
Harrisburg
Metropolis
Shawneetown
Olney
Effingham
Lawrenceville
Fairfield
Mattoon
Paris
Greenville
Hillsboro
Litchfield
Carlinville
Jacksonville
Springfield
Pittsfield
Quincy
Alton
Edwardsville
Carlyle
Nashville
Pinckneyville
Chester
Jonesboro
Golconda
Vienna
Marion
Benton
Mt. Carmel
Olney
Robinson
Lawrenceville
Flora
Clay City
Salem
Centralia
Carlyle
Greenville
Hillsboro
Litchfield
Pana
Taylorville
Shelbyville
Mattoon
Charleston
Paris
Terre Haute
Vincennes
Princeton
Evansville
Henderson
Cairo
Chicago
Peoria
Aurora
Alton
Beardstown
Rockford
Rock Island
Galena
Freeport
Dixon
Ottawa
La Salle
Joliet
Kankakee
Streator
Pontiac
Bloomington
Lincoln
Decatur
Champaign
Danville
Rantoul
Watseka
Kankakee
Joliet
Aurora
Elgin
Waukegan
Chicago
Rockford
Freeport
Galena
Rock Island
Dixon
Ottawa
La Salle
Streator
Pontiac
Bloomington
Lincoln
Decatur
Champaign
Danville
Rantoul
Watseka
Scale
Capital ☆ County Seat Other Cities
Railroad
Navigable Rivers
Longitude A West from B Greenwich C D F G H
Copyright, 1904, by Rand McNally & Company

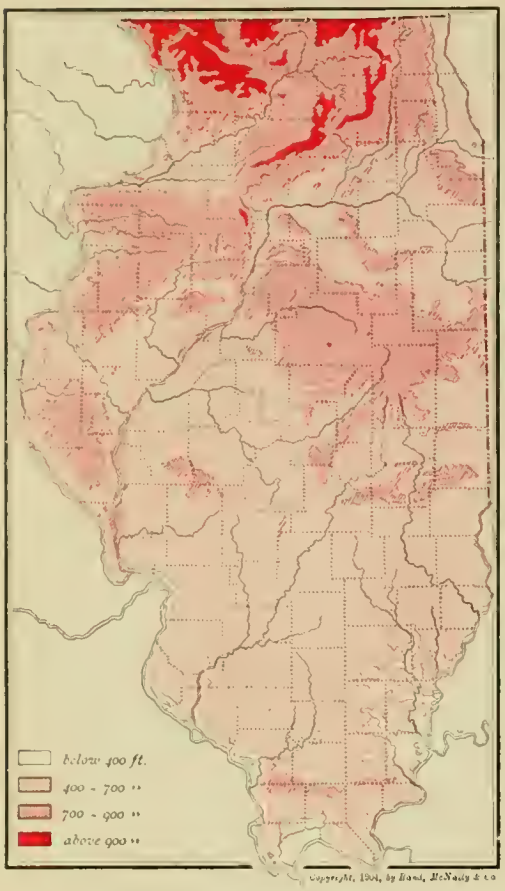


FIG. 4 *A physical map of Illinois.*

it is only a little more than a thousand feet above sea level. (Fig. 4.) This flatness is one of the state's largest resources, for being mantled with the richest of soils, agriculture is carried on in the largest measure and the building of railways and common roads is greatly facilitated. Because of these conditions Illinois ranks first in the value of farm land, and stands second, and only slightly behind Iowa, in the total value of farm products. Illinois ranks first in the production of corn and oats, and lies at the very center of the agricultural activity of the whole country. (Dodge Figs. 259, 260, 262, and 263.)

The Geological Story. The present surface and soil of Illinois have a long, long history, extending backward over perhaps a hundred million years to a time when the present continent of North America was mostly covered by shallow seas. The old land of this so-called pre-Cambrian time extended from northern Minnesota to Norway and Scotland. South of this land lay large islands in what is now northern Wisconsin, and in the Adirondack region; a long ridge of land extended down the eastern edge of the present Appalachian Mountains; there was also a small island in southeastern Missouri, and perhaps one in the southern part of Illinois. (Fig. 5.)

Illinois at that time lay at the bottom of the shallow sea extending between Isle Wisconsin and the Missouri isle, and was continually receiving detritus which later formed *limestones*. Near the land broad zones of sand were being worked over by waves and undertow, forming beds of future *sandstones* which dipped off toward the deeper sea. These sandstones are now great reservoirs, bringing the rain water from Wisconsin and Missouri down the dip to Illinois, and making possible our artesian wells. Although this sea was being filled all the time, yet it was many millions of years before there was dry land within the limits of the state.

After many ages the sea had been filled up and

FIG. 5. *Isle Wisconsin, the old land of Missouri, and the adjacent seas.*

nearly the whole state was a great swamp where the marsh plants were falling down and being converted into beds of *peat* many feet in thickness, only to have the land sink and the sea cover them again. So through long ages, with the land level slightly above or slightly below the level of the sea, the rock and peat layers which constitute the present coal measures were being formed. At the end of this period only the southern tip of the state was beneath the sea, and that was reclaimed soon afterward.

The changes wrought in the Great Ice Age are of next importance. The ice sheet at its farthest advance covered almost all of the state except Jo Daviess County and that portion which lies south of a line drawn through Shawneetown and Carbondale. (Fig. 6.) It brought with it from the north lands, rocks and earth, which it left quite evenly distributed over all the area when it melted back. It advanced and retreated repeatedly, coming

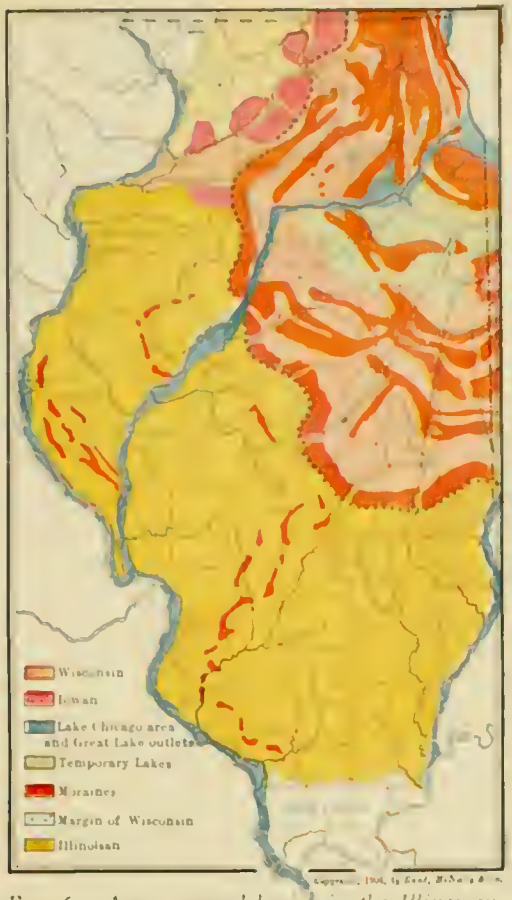


FIG. 6. *Areas covered by ice in the Illinoisan, Iowan, and Wisconsin epochs of the Great Ice Age.*

in the last advance like a great tongue of ice out of the trough of Lake Michigan, leaving its marginal moraines in long rows of low hills with undrained flat lands between. (Fig. 6.)

At various times during the period of the ice retreat the Great Lakes discharged their waters to the Gulf of Mexico through the Mississippi, the Illinois, and the Wabash rivers.

The sheet or mantle of drift left by the ice is exceedingly rich soil, and the bottom lands formed in the valleys of the great rivers are unexcelled in fertility. These advantages, together with the favorable climate and ample rainfall, have made Illinois the richest agricultural state in the Union.

Climate. Lying in the middle of the Great Central Plain, Illinois is exposed to every wind that blows. It has a well marked continental climate with wide contrasts in temperature between summer and winter. In summer 105 degrees is not uncommon, while in winter 35 degrees below zero is

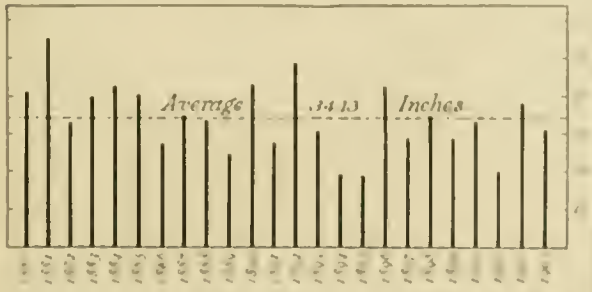


FIG. 7. *The annual rainfall at Dubuque, Ia., from 1880 to 1903.*

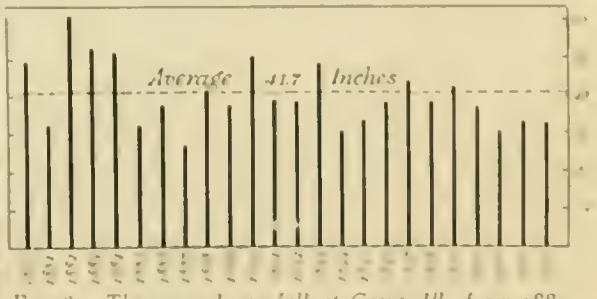


FIG. 8. *The annual rainfall at Cairo, Ill., from 1880 to 1903.*

sometimes recorded in the northern counties of the state. (Fig. 9.)

The growing season, or the period between the latest and the earliest killing frosts, varies from six months in the north to seven months in the south.

The weather of the state is almost wholly determined by the passage of cyclonic storms. An endless procession of low pressures is passing eastward across the continent, and many of them cross Illinois. Even when the center of a storm is far to the north or south, Illinois is swept by winds produced by the cyclone. (Dodge Figs. 90, 92, and 96.) Sometimes these storms are accompanied by destructive tornadoes. Peoria is near the center of tornado frequency in America.

Because of the constantly shifting winds the rainfall of Illinois is well distributed through the year, and the rainy and cloudy days are well interspersed with days of sunshine. The ample supply of moisture, warm days, and abundant sunshine favor the growth of corn. There is usually an abundance of rain for all farm crops and for all forest trees. (Fig. 10.) Yet there are occasional drouths which do immense damage to the crops. (Figs. 7 and 8.) Doubtless these occasional severe drouths have helped to keep large areas of the state treeless.

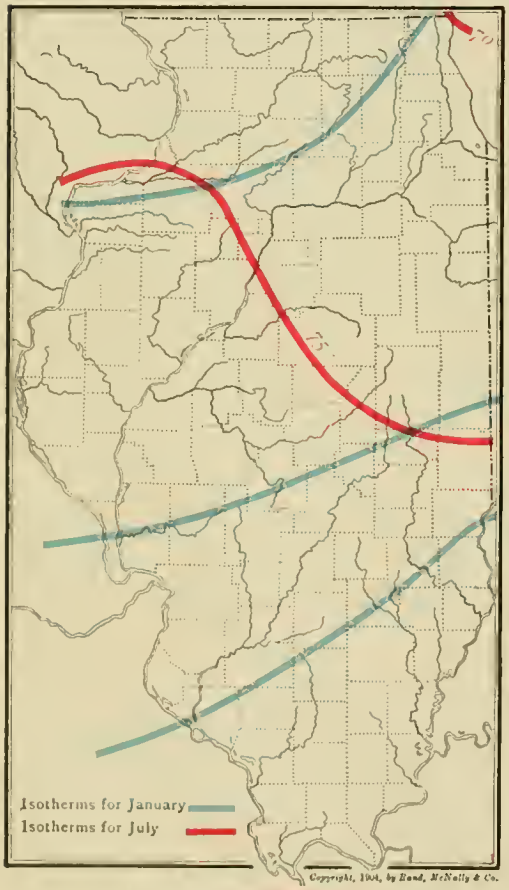


FIG. 9. *Mean temperature of Illinois in January and July.*

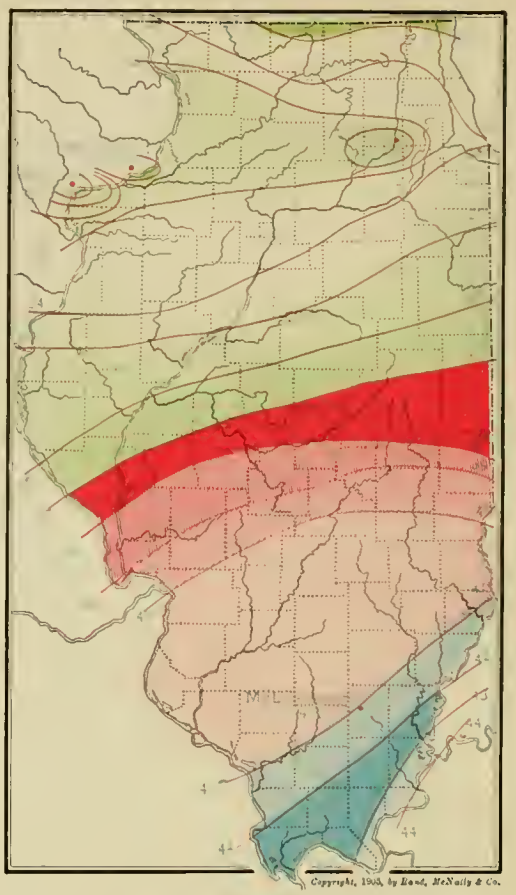


FIG. 10. *The mean annual rainfall of Illinois.*

Vegetation. The ice invasion and the lack of barriers have provided a wide variety of plant forms in Illinois; northern species have mixed with invaders from the humid gulf region and from the arid southwest. The great forest area of the eastern United States originally covered the southern counties of Illinois and followed up the river valleys. (Fig. 12.) Most of the state, however, was prairie when the white man came. Lack of drainage over large areas, occasional drouths, and annual prairie fires have kept the prairie free from trees. Since the land has

FIG. 11. *Starved Rock, on the Illinois River near Utica, on which, in 1682, La Salle built Fort St. Louis.*

been drained and the prairie fires suppressed, trees will grow anywhere.

Animal Life. When La Salle made his first visit to the region, game was plentiful. Buffalo, deer, and elk roamed the prairies. Bears, wolves, panthers, raccoons, and opossums abounded in the woods. The wild swan, the goose, the duck, and the pelican were common on all the waters. Now all the large forms of wild life have disappeared, and even the smaller game birds are kept from extermination only by the favor of the law.

Nearly half a million dollars' worth of fish were taken from the Illinois River alone in 1900, and while the waters of the state have an enormous capacity for raising fish, they have been much neglected. Now, however, there is a State Fish Commission and some attention is being given to hatching and protecting fish.

Native Peoples. Two hundred years ago Illinois was sparsely peopled by a few thousand Indians. The Algonquin tribes occupied the state, the Pottawattomies about Chicago, the Sacs and the Foxes in the Rockford region, the Illinois along the river bearing their name, and various smaller tribes elsewhere, while the territory of the great Siouan family touched the western boundary of the state along the Mississippi River. To-day they are all gone.

FIG. 13. *The La Salle monument in Lincoln Park Chicago.*

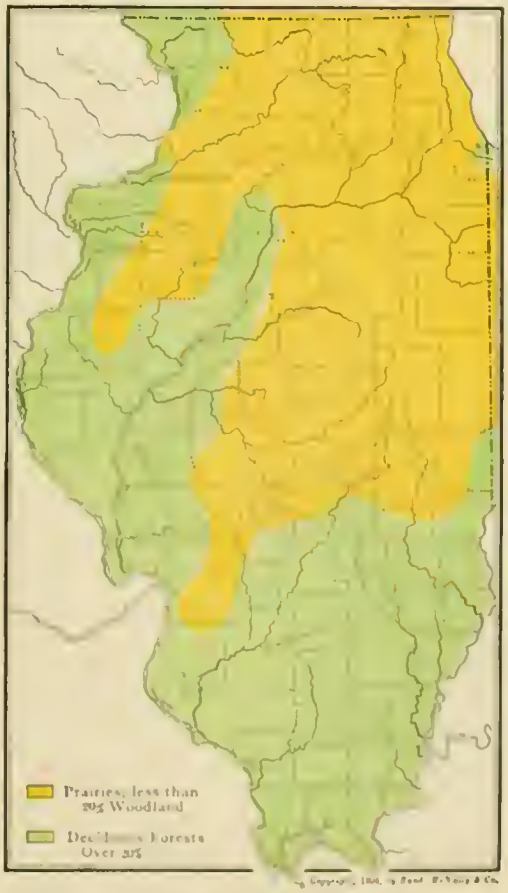


FIG. 12. *The distribution of vegetation.*

History. The French *voyageurs* and the Jesuit Fathers were the first white people to visit the present state of Illinois. They had established themselves on the lower St. Lawrence, and had pushed westward along the rivers in their quest for furs and in their zeal for converting the savages. This is how in 1673 the Jesuit priest, Père Marquette, and the fur trader, Louis Joliet, came to explore the Mississippi, coming from Lake Michigan by way of the Fox and the Wisconsin rivers, and floating down the

"Father of Waters" in their birch-bark canoes. Somewhere near the mouth of the Des Moines River they were hospitably entertained by the Illinois, the tribe whose name was later applied to the state. They explored the country as far south as the Arkansas River, and returning north, their course took them up the Illinois River. (Fig. 15.) The winter of 1674-5 Père Marquette spent, sick, in a cabin on the Chicago River, near where the city of Chicago now stands. This was the first white man's habitation in the state.

FIG. 14. GEORGE ROGERS CLARK, *the hero of Kaskaskia and Vincennes. From the original painting by Jarvis, now (1904) in the possession of the Virginia Historical Society, Richmond, Va.*

In the winter of 1679-80 La Salle, with a party including Tonty and Father Hennepin, came up the St. Joseph River, portaged to the Kankakee in Indiana, and drifted down the Illinois River. In January of 1680 they built a fort which they called "Crevecœur," on the left bank of the Illinois a short distance below Lake Peoria. In February, 1680, Father Hennepin set out from this fort on his famous journey of exploration of the upper Mississippi River.

In 1682 La Salle and Tonty built Fort St. Louis, on Starved Rock, near Utica, and within the next seven years French trading posts were established at Kaskaskia in Randolph County, and Cahokia in St. Clair County.

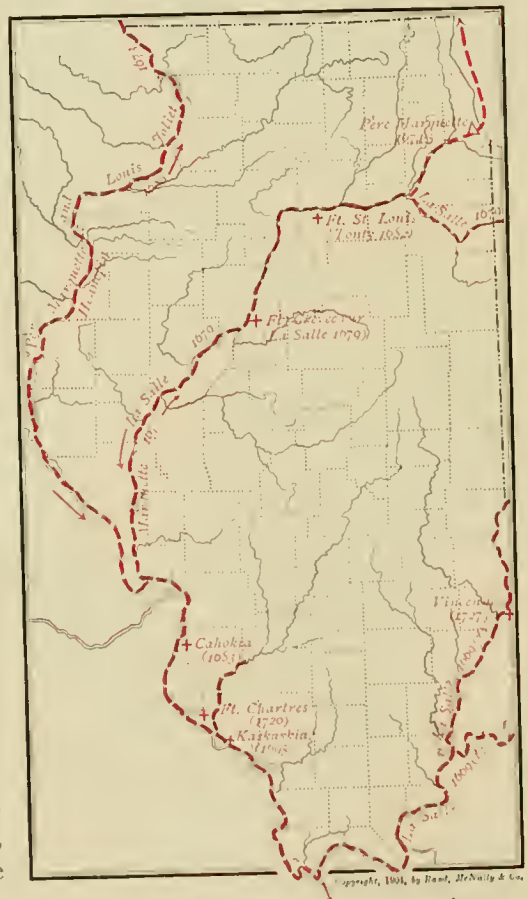


FIG. 15. *The earliest voyages and settlements of the French.*

Fifty years later there were six growing settlements within the area of the present state. In 1778 there were three important British posts in central North America. These were Detroit, Vincennes, and Kaskaskia. They were a menace to the Kentucky settlements until George Rogers Clark and a handful of men from Kentucky, by almost incredible daring, captured Kaskaskia and Vincennes, and added the area northwest of the Ohio River to the territory which became the United States. Out of this area northwest of the Ohio were carved Ohio, Michigan, and Indiana; the rest was organized as the Territory of Illinois in 1809. In 1818 Illinois was admitted as a state.

Settlement. The French occupation of the region of Illinois contributed a very slender element to the white population. Their influence remains mostly in a sprinkling of names applied to rivers and towns, such as Joliet and La Salle. The river routes of the central west brought large numbers of hardy pioneers from Kentucky and Virginia in the early decades of the nineteenth century.

The hostility of the Indians retarded settlement from the north. After the Black Hawk War there was a large influx from the eastern states, by way of the Great Lakes and the Erie Canal. In the 40's and 50's a great German immigration came along the same route. Chicago to-day has one of the largest German populations of any city in the world. A few years later a large influx of Scandinavians settled in the northwestern counties. Since the coming of the railway in 1850 development has been rapid in every part of the state. Since the 80's the increase in population has been almost wholly in the cities. Chicago is one of the most cosmopolitan cities in the world.

FIG 16. BLACK HAWK (*Ma-Ka-Tai-Me-She-Kia-Kiah*), *chief of the Sacs and Foxes in 1832, born at Kaskaskia, Ill., 1767.*

From a lithograph portrait in McKenney's "History of the Indian Tribes of North America," and reproduced by permission of the Chicago Historical Society

FIG 17. *A typical early settler's cabin in Illinois. Notice the logs chinked with plaster, and the old stone chimney. The outbuildings are modern.*

Industrial Development. Water transportation has had an extremely powerful influence in the development of Illinois. The rivers and the lakes were the earliest lines of travel; most of the settlers came by boat, and the first towns were along the rivers. The introduction of steamboats upon the Ohio and the Mississippi rivers in 1811, and later upon the Great Lakes, gave a great impetus to western development. The middle third of the last century saw steamboat traffic rise to supremacy in the West. At that time the Ohio and the Mississippi rivers were the greatest arteries of trade upon the continent, and even the Embarras, Kaskaskia, Illinois, and Rock rivers had their steamboat service. The coming of the railway in 1850 furnished a better means of traffic, and turned the tide of commerce and travel from the rivers, so that many of the river towns declined in importance. Traffic on the Great Lakes, however, has steadily increased, until to-day they form one of the most important waterways of the world. Lake transportation, by means of which coal and iron are brought to Chicago and wheat is shipped east, has been one of the largest factors in the building of the city and the development of the industries of the state. (Fig. 23.)

In early days the common roads were very

FIG. 18. *A Mississippi River steamboat. The type of western wheeler built up the river commerce to southern ports and opened up the industries of the prairies.*

poor, as road-making material was difficult to procure in many places. Thus the pioneer was seriously handicapped in being unable through a large part of the year to get his produce to market or to procure the necessaries from the outside world. Later the very success of the railway building tended to discourage the making of good wagon roads. Recently, however, the making of good country roads has become a matter of pride, and many hundreds of miles of excellent roads have been built within the state. These roads almost invariably follow the section lines. Years ago the state was surveyed into townships six miles square, reckoning from so-called principal meridians and base lines as shown on the map. (Fig. 3.) These township lines have furnished the basis for county boundaries.

The compass does not point to the true north anywhere in the state, but a little to the east of north. (Fig. 19.) Corrections must be made accordingly. Moreover, the correction for a given place varies slightly from year to year, so that a line once surveyed needs to be dated.

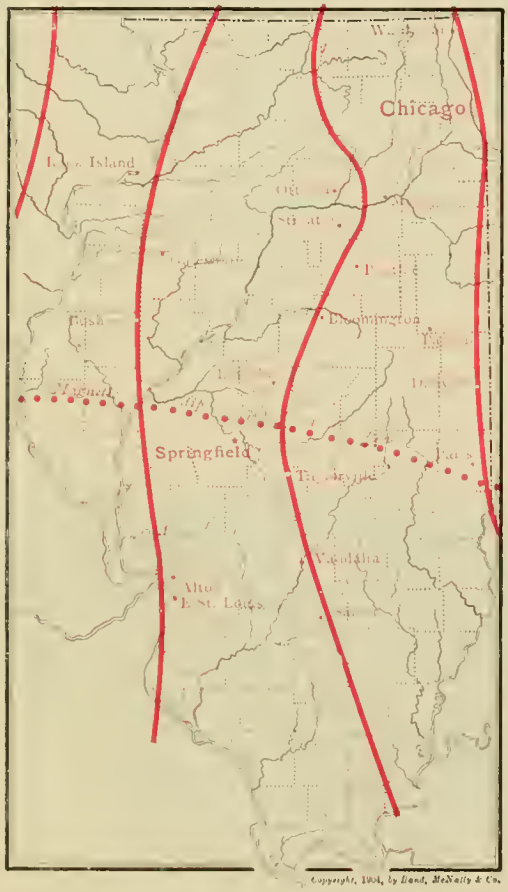


FIG. 19. *East magnetic declination, 1902. The compass needle points east of the true north.*

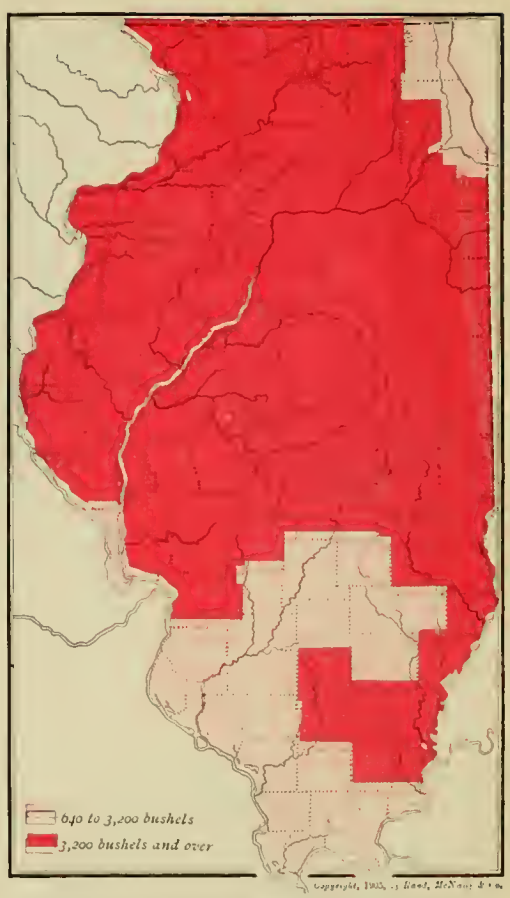


FIG. 20. *The yield of corn per square mile.*

Agriculture. By far the greatest and most enduring source of wealth in the state are the level and extremely fertile farming lands. The gentle slopes and fine soil have invited the introduction of labor-saving machinery, thus making large farms possible and enormously increasing the production per capita and decreasing the cost of the product. In large areas the extreme flatness has been a serious handicap to development, because of a lack of drainage. Extensive ditching and tiling, however, have removed this difficulty to a large extent, and as a result a larger percentage of land is under the plow than in any other state except Iowa. (Dodge Fig. 253.) Farm lands cover 91.5 per cent of the total area of the state, and 84.5 per cent of this area is improved

land. The average size of the farms is 124 acres, and 61 per cent of the farms are worked by their owners.

The climate and the soil invite the cultivation of nearly every crop known in the Temperate Belt, but by far the most valuable product of the soil is corn, over 10,000,000 acres were planted to this grain in 1900.

FIG. 21 *Threshing wheat in a large wheat district of Illinois*

FIG. 23 *The immense grain elevators along the Chicago River. Grain from the field is stored here and then shipped by boat and rail all over the world*

This was more than twice the area given to any other crop; the yield was nearly 400,000,000 bushels. Illinois ranks first in corn and in the total production of cereals, with Iowa a close second. (Dodge Fig. 260.) The best yield of corn is found in the glacial soils of the central and northern parts of the state. Here a yield of over 125 bushels per acre is often known.

Illinois is first among the states in the production of oats. (Dodge Fig. 263.) In 1900 4,570,034 acres or 7,140 square miles were devoted to this crop. About 180,000,000 bushels, or an average of more than 2,500 bushels per square mile, were raised. (Fig. 22.) Only the state of Washington exceeded this yield. Winter wheat is raised, though not in large quantities, Illinois is the fourteenth state, with only 20,000,000 bushels. Only 21,375 acres of barley were grown in 1900, though in yield per acre Illinois ranks third among the states. Illinois comes eighth in the production of rye, with a million bushels.

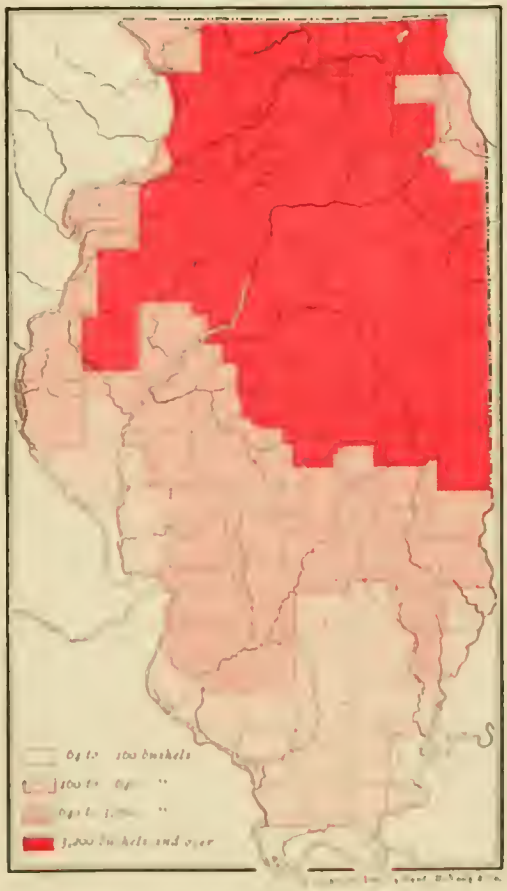


FIG. 22 *The yield of oats per square mile*

This generous production of food grains puts Illinois far in advance of all other states in the amount and the value of cereals produced. Illinois and Iowa have each 9.1 per cent of the entire country's cereal acreage. The value of the cereal crop in Illinois in 1900 was $164,784,437, or 77.6 per cent of the entire crop value of the state.

Many profitable crops besides cereals are raised Illinois outranks all other states in the quantity and quality of its broom corn, producing about 60,000,000 pounds, or

over two-thirds of the entire output of the country. Coles County leads, with 22 per cent of the total crop of the United States.

Almost 13,000,000 bushels of potatoes were grown in 1899, the northern half of the state producing the larger portion. In the southern counties the sweet potato flourishes, yielding a crop of half a million bushels.

Every variety of temperate climate fruit thrives, though the apple crop, to which every county contributes, is the largest. There were over 13,000,000 trees, producing over 9,000,000 bushels of apples, in 1899; Clay County has the largest yield.

In the same year more than 200,000 bushels of cherries, 130,000 bushels of pears, 13,000,000 quarts of strawberries, 7,000,000 quarts of blackberries, and 20,000,000 pounds of grapes were produced, and large quantities of many other small fruits. (Fig. 25.)

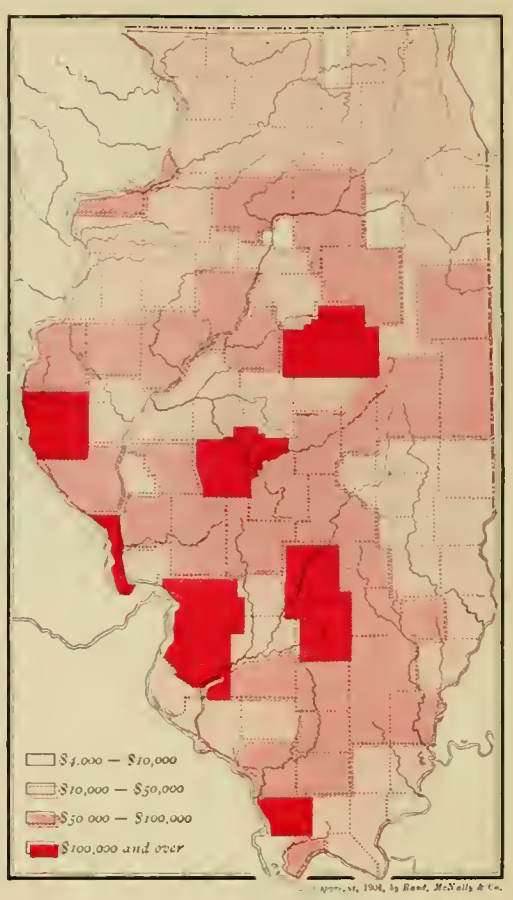


FIG. 25 *The value of fruit products by counties.*

Climate and soil conditions are ideal for the growth of grass and other forage crops. (Fig. 27.) Three and a third million acres are now devoted to these crops, and taking no account of the fodder from cornstalks, there is a yield of nearly 4,000,000 tons of forage crops, valued at over $25,000,000.

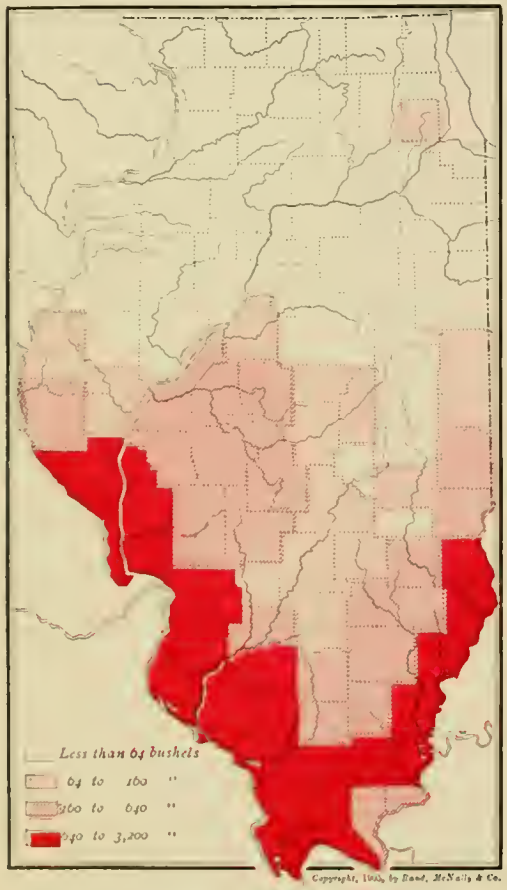


FIG. 24. *The yield of wheat per square mile.*

Some minor crops are sorghum, tobacco, and the castor bean, which is raised mostly in the southern counties. In the production of honey Illinois leads the country with an annual output of 1,500,000 pounds.

Stock Raising. It is easy to see that with all this grain and forage, stock raising may be extensively carried on. The superior and plentiful crops of oats and hay encourage the breeding of horses, of which there are over a million, valued at about $70,000,000. (Dodge Figs. 265 and 267.) Nearly all the work on the farms is done by horses.

Corn cannot be transported so readily as wheat. It heats and molds easily when kept in large quantities,

FIG. 26. *Looking over the stock yards at Chicago. The cattle are fattened in the country and shipped to Chicago for slaughter*

FIG. 28. *A herd of dairy cows on the Clover Farm Dekalb, Ill.*

so that it is largely used on the farm as feed for cattle and hogs. There are in the state over 3,000,000 cattle, valued at $82,000,000. (Dodge Fig. 251.) Many of these are brought from the Western ranges to be corn fed before slaughtering. Dairying, however, is an important industry. There are in the state over a million dairy cows, yielding annually over 450,000,000 gallons of milk. Much of this goes to Chicago and other city markets to be used as fresh milk, but the larger part is made into butter at numerous creameries or into cheese at factories, or is condensed and canned for domestic and export trade. The largest factory in the world for condensing milk is located at Dixon, Ill. It uses 300,000 pounds of milk a day. The city of Elgin has a world-wide fame for its butter, and for a generation it has been the leading butter market of the country. Nearly $6,000,000 worth of butter was sold from this city and vicinity in 1900. The total annual value of the dairy products of the state is $30,000,000. (Dodge Figs. 224 and 225.)

FIG. 27. *The production of hay and forage per square mile.*

One of the most profitable ways in which corn goes to market is in the form of pork. Illinois ranks second in raising of hogs, with about 6,000,000, valued at about $24,000,000. (Dodge Figs. 268 and 269.)

There are about a million sheep in the state, valued at nearly $4,000,000. This is comparatively a very small number, however. The reason for this may be found in the large proportion of flat and relatively undrained land, which is not suitable for the rearing of sheep

Poultry Raising. Where grain is cheap and plentiful, poultry is profitable.

FIG. 29. *Cooling and bottling milk at the Gurler dairy farm, DeKalb, Ill.*

Illinois ranks second among the states with nearly 17,000,000 chickens, half a million turkeys, and nearly as many ducks, and with a total poultry value of about $6,500,000. In the production of eggs, the state ranks third with nearly 87,000,000 dozen, valued at about 12 cents a dozen at the farm.

Total Value of Farm Products. In the total value of farm products Iowa and Illinois are in a class by themselves, leading all other states. The total value for Illinois in 1900 was $345,000,000. But in the total value of farm lands, farm improvements, live stock, and farm implements, Illinois stands far in the lead, its valuation reaching the almost incredible sum of $2,000,000,000.

Mineral Resources. Illinois has enormous deposits of coal. More than 35,000 square miles, or about two-thirds of the whole area of the state, are underlaid by productive beds. (Fig. 32.) This coal is of very high quality, the block coal being especially adapted to the production of steam. The coal deposits lie in nearly horizontal beds, in a few workable seams, from one foot to five feet ten inches thick, and within 600 feet of the surface. The most productive mines are in Sangamon, St. Clair, Vermilion, Macoupin, La Salle, Grundy, Williamson, and Bureau counties, though fifty-eight counties contribute to the output.

FIG. 31. *Hundreds of cars loaded with coal from the Illinois coal mines, waiting to be sent to the consumer.*

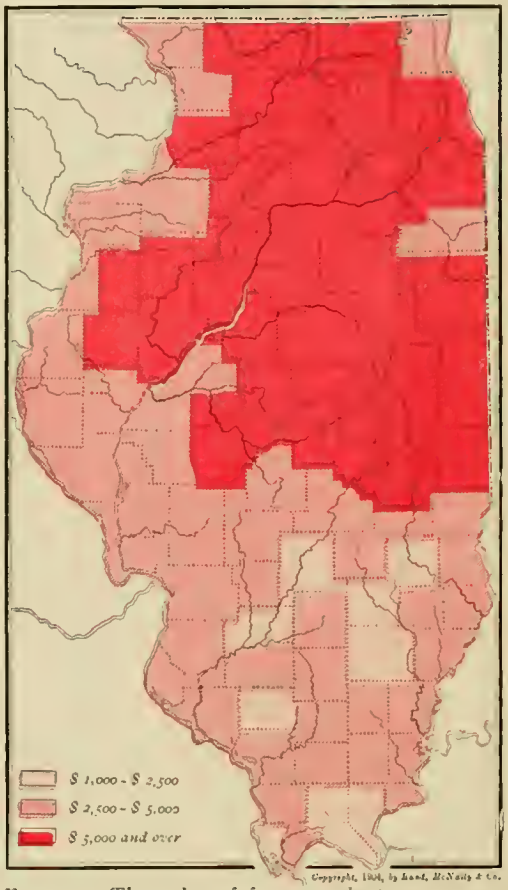


FIG. 30. *The value of farm products per square mile.*

Coal was first reported from Fort Crevecœur by Father Hennepin; this was the first discovery of coal in America. Notwithstanding this very early discovery, coal was not extensively produced in Illinois until since 1870. The output in 1880 was about 6,250,000 tons; in 1904 it was 35,000,000 tons (Dodge Fig. 222), valued at about $1 a ton at the mine. This

gives Illinois second rank among the coal-producing states, with about 10 per cent of the country's output (Dodge Fig. 222.) The presence of coal is largely responsible for the extensive manufacturing which is carried on in and around Chicago and other cities. Chicago produces 70 per cent of the total manufactures of the state.

Limestones convenient for building and road-making are found in most of the counties. Over $2,000,000 worth is quarried each year, and in addition over half a million dollars' worth of cement is put on the market annually.

Clays for brick-making are found everywhere, in glacial drift, in river bottoms, and in the coal measures. Very extensive brick manufactories are located at Chicago, and streets are largely paved with brick all over the state. Tile and terra cotta are also extensively manufactured wherever coal is abundant.

Lead and zinc are produced in the region of Galena.

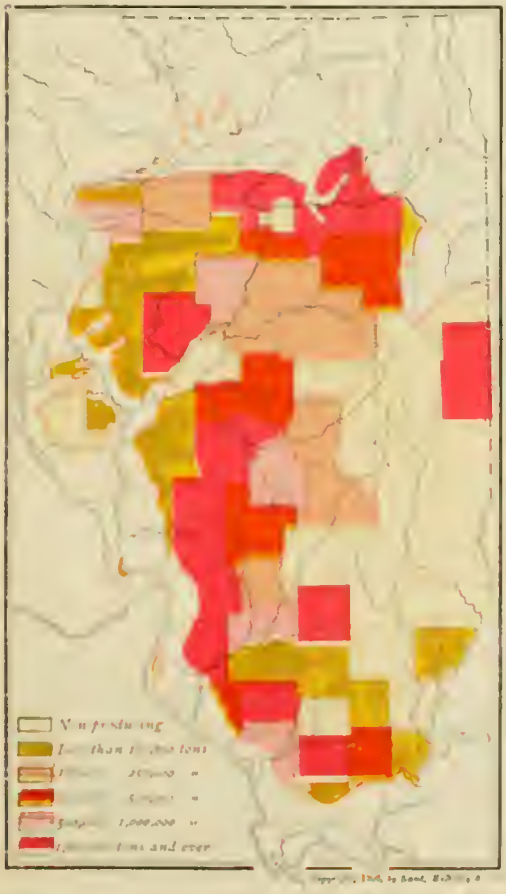


FIG. 32. *The coal fields of Illinois and the production of coal by counties.*

FIG. 33. *The value of manufactured product per square mile.*

Manufacturing. Many causes combine to make Illinois the richest manufacturing state west of the Appalachian Mountains: the central location; the superior advantages of water transportation furnished by the Ohio and the Mississippi rivers, the still more excellent water route to the East by way of the Great Lakes; the great deposits of coal, the proximity to the hardwood forests of the Central States and the pine forests of the upper lakes, the exceeding richness of the iron deposits of the Lake Superior country; the position of Lake Michigan which lies directly across the normal east-west trend of commerce, focusing land transportation routes at the southern end of the lake; the glaciated land surface, flat and rich for agricultural development and making easy the building of railways (Dodge Fig. 195.) All these factors are involved in the commercial

FIG. 34. *Shipping on the Chicago River. All the Great Lake ports are reached by steamers and sailing vessels that leave the port of Chicago.*

supremacy of the state of Illinois and in the phenomenal development of Chicago, the second largest city in America. Many lines of steamers on the Great Lakes bring coal from the Pennsylvania region, iron from Lake Superior, lumber from the upper lakes, and take grain to the seaboard. An enormous business is done in the seven or eight months during which navigation is open, but the railways are open every day in the year, so the business they do is much greater. It is to its superior transportation facilities that the state owes its rapid development. In 1900 there were within the state 11,058 miles of railway, a larger mileage than is possessed by any other state.

FIG. 35. *Through the manufacturing district of Chicago. The picture shows the bascule bridge at 12th Street open to allow a lake steamer to pass.*

Illinois ranks first among all the states in slaughtering and meat-packing; also in the manufacture of distilled liquors, agricultural implements glucose, steam railway cars, and bicycles.

By far the most important industry in the state is slaughtering and meat-packing, which in 1900 amounted to almost $288,000,000; 93 per cent of it was done in Chicago. (Fig 26, Dodge Fig. 266.) Every part of the animals slaughtered is utilized; dependent industries result, with products whose value is measured in millions of dollars. For example, the value of soaps and candles made is $9,000,000; leather products are equally valuable.

Good transportation assures cheap coal and iron; hence the manufactures of iron and steel show an annual product valued at over $60,000,000. About two-thirds of this is made in Chicago, and nearly the other third in Joliet. (Dodge Figs. 276 and 638.)

The value of agricultural implements made in Illinois is three times that of any other state. The year's product in 1900 was worth over $42,000,000. Men's and women's factory-made clothing amounted to $47,000,000, most of which was manufactured in Chicago. Railway cars amounted to $25,000,000, Illinois leading in this industry. The state also stood second in the manufacture of books, furniture, and musical instruments.

Because of the vast quantities of corn and other grains produced, Illinois ranks first in the making of distilled liquors, with an annual product valued at about $58,000,000. The city of Peoria produces three-sevenths of this, the largest output

FIG. 36. *The plant of the Elgin National Watch Company, Elgin, Ill.*

FIG. 37. *The Illinois Central Railroad bridge across the Ohio River at Cairo*

of any city in the land. Many cities contribute to the production of malt liquors, the annual value of which, for the entire state, is $20,000,000. This industry also depends upon the great crops of corn and barley.

About 20 per cent of the corn crop is used for manufacture within the state. The largest single product is glucose, a kind of sugar; the annual output is worth $18,000,000. From corn more than thirty-five distinct products are made, varying from starch, glucose, and liquors to the finest of paper.

A very large industry has grown up in the making of electrical apparatus and supplies, the value of the product passing the twelve-million-dollar mark. A few of the lesser industries of special prominence are barbed wire at Dekalb, watches at Elgin, glass at Ottawa, and stoves and corsets at Aurora.

These are only a few of the more important industries. The complete list includes hundreds of separate lines, and the manufacturing industries of Illinois are really only just beginning to be developed.

FIG. 38. *A general view of the Illinois Steel Works at South Chicago.*

Railways. Along with the agricultural and industrial development of Illinois, and the largest factor in it, is the growth of railways. One of the first lines in the state was the Illinois Central, which was given an extensive land grant by Congress in 1850. This line is now one of the richest and strongest in the country, and still pays to the state 7 per cent of its gross income, being otherwise exempt from taxation.

In 1860 there were 2,790 miles of railway in the state. This mileage had grown to 10,165 in 1880, and to-day amounts to 11,398 miles, an average of twenty miles of railway for every 100 square miles of area, or twenty-five miles for every 10,000 people. This gives Illinois first rank among the states in railway mileage.

There are now 116 railway corporations in the state. In 1900 they carried over 42,000,000 passengers, the average journey being 24.12 miles. In the same year nearly eight and a half million tons of freight were carried.

Chicago ranks as the greatest railway center

FIG. 39. *The Eads bridge across the Mississippi River at East St. Louis.*

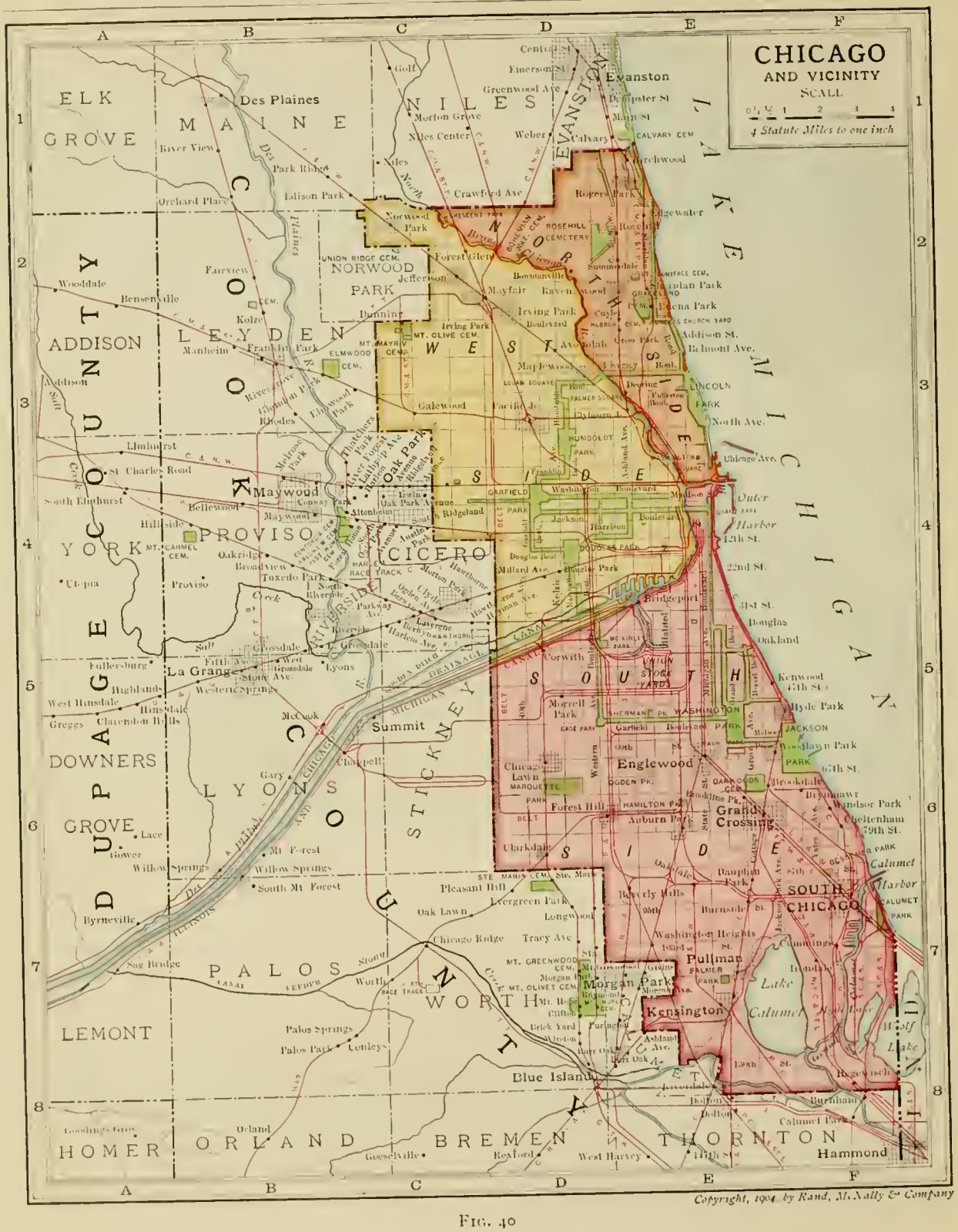

CHICAGO
AND VICINITY
SCALE
4 Statute Miles to one inch
ELK GROVE
MAINE
NILES
EVANSTON
LAKE MICHIGAN
Des Plaines
Evanston
Park Ridge
Edison Park
Norwood Park
NORWOOD PARK
Jefferson
Dunning
Forest Glen
Rogers Park
Edgewater
Roscoe
Summerdale
Bowmanville
Mayfair
Ravenswood
Irving Park Boulevard
Irving Park
Addison St.
Belmont Ave.
LINCOLN PARK
North Ave.
Chicago Ave.
Outer Harbor
12th St.
22nd St.
31st St.
Douglas
Oakland
Kenwood
Hyde Park
JACKSON PARK
67th St.
Englewood
Grand Crossing
79th St.
Cheltenham
Windsor Park
Brookdale
Calumet Harbor
CALUMET PARK
SOUTH CHICAGO
Pullman
Morgan Park
Kensington
Lake Calumet
Lake
Golf
Hegewisch
Burnham
Calumet Park
Hammond
Thornton
West Harvey
Blue Island
Riverdale
Dolton
ADDISON
LEYDEN
PROVISO
YORK
CICERO
OAK PARK
Maywood
Melrose Park
Bellwood
Hillside
Elmhurst
St. Charles Road
South Elmhurst
Addison
Wooddale
Bensenville
Fairview
Franklin Park
Manheim
Kolze
Rhodes
Elmwood Park
Thatcher Park
Oak Park Avenue
Ridgeland
Harlem Ave.
Irving Park Road
Austin Boulevard
Austin
Oak Park
Irving Park
Altenheim
Conway Park
Tuxedo Park
Oakridge
Broadview
Proviso
Ukpa
Cermak Road
Cicero Ave.
Laramie Ave.
Pulaski Road
Kedzie Ave.
Douglas Park
Millard Ave.
Morton Park
Hawthorne
Bridgeport
Corwith
Stock Yards
Union Stock Yards
Canal
Chicago River
North Branch
Main Branch
South Branch
Chicago Sanitary and Ship Canal
Drainage Canal
Western Ave.
Ashland Ave.
Halsted
Racine Ave.
Loomis
Lincoln
Paulina
Damen Ave.
Western
Robey
Wood
Hoyne Ave.
Leavitt
Oakley Ave.
Ogden Ave.
Roosevelt Road
Taylor
Polk
Grand Ave.
Chicago Ave.
Division
Clybourn
Halsted
Lincoln
Belmont
Fullerton
Diversey
Wellington
Addison
Irving Park
Montrose
Lawrence
Foster
Peterson
Devon
Touhy
Howard
Jarvis
Morse
Greenleaf
Pratt
Farwell
Estes
Lunt
Pratt
Touhy
Rogers

FIG. 11. *In the heart of the business district of Chicago.*

in the world. Curiously enough it is the position of Lake Michigan which is most responsible for the concentration of land transportation routes at Chicago, because it thrusts its 300 miles of length directly athwart the normal westward pathway of travel and commerce from the Mohawk Valley.

FIG. 12. *Chicago's escutcheon.*

The ports of western Europe have been the centers of the world's commerce through all the history of the New World. This fact has led to the development of Boston, New York, and Philadelphia, our ports nearest Europe. Of these three cities Boston has been largely shut off from the trade of the west by the Hoosac Mountain barrier; Philadelphia likewise has long been handicapped by the Appalachian barrier. New York alone has had free and unhampered access by way of the Mohawk Valley and the Great Lakes to the flat plains of the West.

FIG. 13. *A group of the buildings at the University of Chicago.*

The most direct route from Buffalo to El Paso, Tex., lies through Chicago. All the country west of Lake Michigan and north of this line finds its shortest route to the East through Chicago. This accounts for the twenty-four railways radiating like spokes of a wheel from Chicago, and gives a new meaning to the device on Chicago's escutcheon, "The parting of the ways."

Encircling the city at various distances from the center are three so-called "belt lines" cutting across all the tracks of the twenty-four roads, and making it easy to switch cars from one road to another without their going to the center of the city, thus avoiding congestion of freight.

The Growth of Cities. The most striking feature in the movement of population in Illinois in the past twenty years lies in the growth of cities. The agricultural population is very evenly distributed over all the counties of the state. (Fig. 45.) But cities have sprung up all over the state, particularly wherever water power or coal is convenient for manufacturing, or where special facilities for transportation exist. Chicago, with 1,698,575 people, or about one-third of the population of the state, is fringed with rapidly growing suburban industrial or residence towns of considerable size. Fifty other cities outside of this area, having from 5,000 to 50,000 people, are growing at quite

FIG. 14. *Along the lake front, north of Chicago.*

as rapid a rate. There are 316 cities and towns in the state having a population of 1,000 and over. In fact one-half the population of Illinois is urban, and the density for the state is eighty-six people per square mile, which is more than three times the density for the whole country.

The State Government. The present constitution of Illinois, the third it has had, was adopted in 1870. To amend it requires a two-thirds vote of each house of the legislature and a majority of the votes cast at a popular election. Voters must have resided in the state one year, in the county ninety days, and in the election precinct thirty days next preceding an election.

The legislature consists of a Senate of fifty-one members, elected for four years, and a House of Representatives of 153 members elected for two years. Three Representatives are elected from each of the fifty-one senatorial districts. Legislators receive $1,000 and mileage, and $50 for incidental expenses. The session begins at the Capitol in Springfield the first Wednesday after the first Monday in January of odd-numbered years.

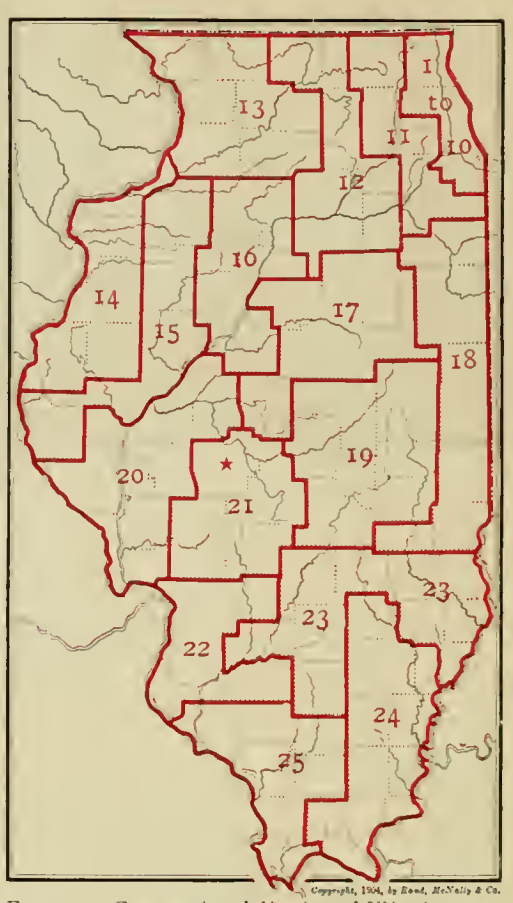


FIG. 46 *Congressional districts of Illinois, 1904.*

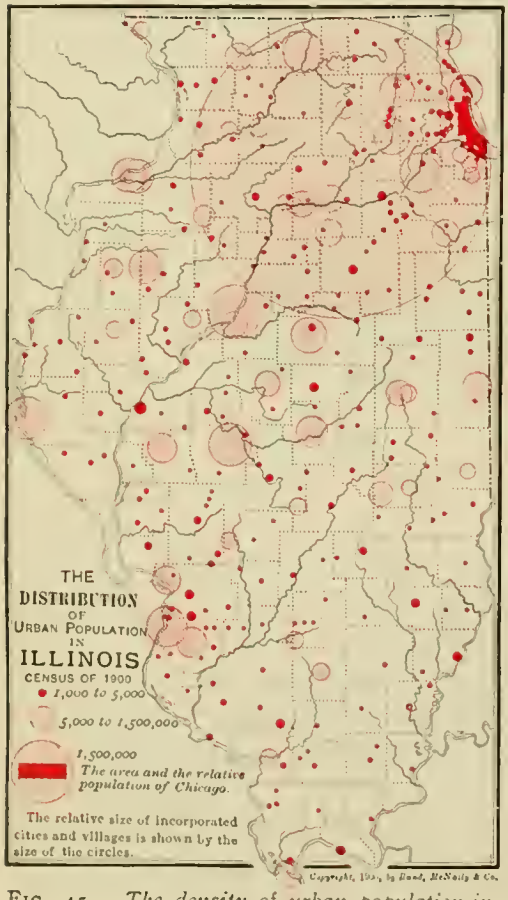


FIG. 45. *The density of urban population in Illinois, census of 1900.*

The Governor, Lieutenant-Governor, Secretary, Auditor, Superintendent of Public Instruction, and Attorney-General are elected for four years. The Treasurer is elected for two years and is not eligible for election the next succeeding term.

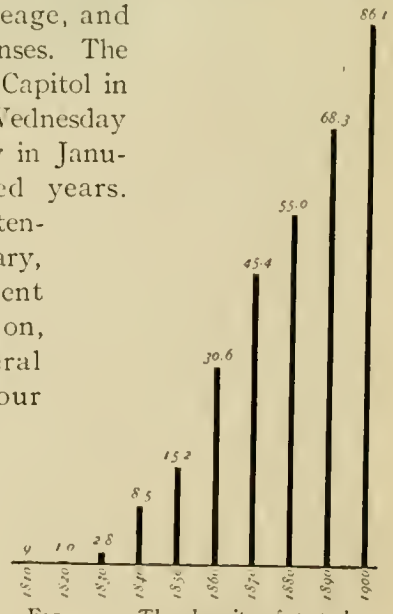


FIG. 47. *The density of population per square mile in Illinois.*

FIG. 48. *The State Capitol at Springfield.*

For judicial administration the state is divided into seven districts, in each of which a Judge of the Supreme Court is elected, serving for a term of nine years. Other courts, inferior and appellate, have been established. The judges of the Circuit Court are elected for six years. Each county is entitled to two or more terms of this court each year.

In each county a county judge, clerk of court, and a county attorney are elected for terms of four years, as are also the coroner and the sheriff. County business is done by a board of supervisors, one from each township, though a few counties have commissioners instead.

The state has twenty-five Representatives in the National Congress.

In 1901 there were in the state 1,091,172 men of militia age, and the National Guard had an enrollment of 8,490 men.

Penal Institutions. There are two penitentiaries, one at Joliet and one at Chester; a reformatory at Pontiac, and a State Home for Juvenile Offenders at Geneva.

State Charities. There is a Soldiers' and Sailors' Home at Quincy, a Soldiers' Widows' Home at Wilmington, a Soldiers' Orphans' Home at Normal, an Industrial Home for the Blind and a charitable Eye and Ear Infirmary at Chicago, and an Asylum for Feeble-Minded Children at Lincoln. There is an Institution for the Education of Deaf and Dumb and an Institution for the Education of the Blind at Jacksonville.

Asylums for the insane are located at Kankakee, Elgin, Watertown, Jacksonville, and Anna, for incurable insane at Peoria, and for insane criminals at Chester.

FIG. 49. ABRAHAM LINCOLN.
A monument in bronze, by Augustus Saint Gaudens in Lincoln Park, Chicago.

Education. In all lines of education Illinois holds a very high rank. Provision is made by the state for the free education of all, and every grade of instruction is provided. The State University is at Urbana. It has a beautiful campus, comparing favorably with the finest in the world. There are eighteen buildings, representing a value of $2,000,000. The library building is one of the finest in the country. The building and its decorations were designed by professors in

FIG. 50. *Across the campus at Northwestern University, Evanston.*

the State University. The University consists of six colleges and seven schools: literature and arts, engineering, science, agriculture, medicine, law, library science, music, pharmacy, dentistry, commerce, domestic science, and a graduate school.

FIG. 51. *The Library Building, University of Illinois, at Urbana.*

There are 305 members in the faculty, and in 1903 there were enrolled 3,288 students, about one-fourth of whom were women. This attendance puts the University among the seven great universities of the United States.

The Agricultural College is partly under the supervision of the general government and holds a very high rank in scientific research bearing on agricultural problems. The work that this school is now doing promises to double or treble the value of the corn crop within the present generation.

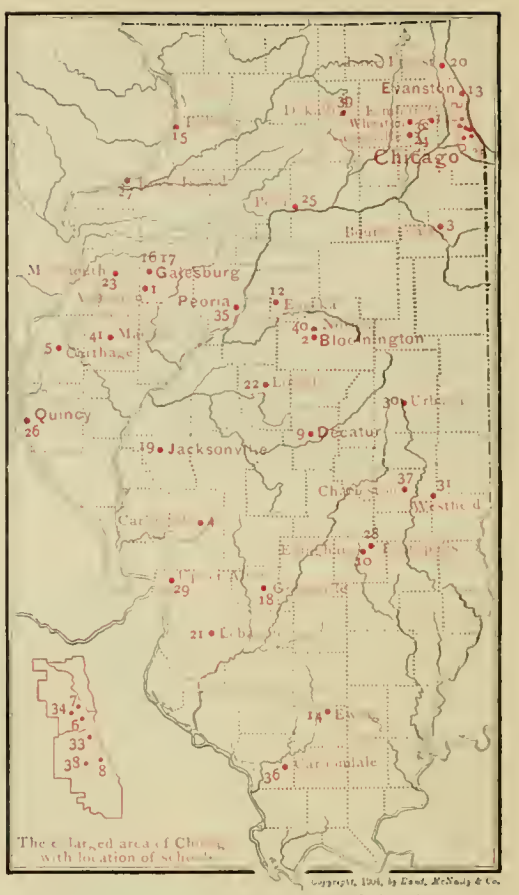


FIG. 52. *The leading educational institutions of Illinois.*

THE LEADING EDUCATIONAL INSTITUTIONS OF ILLINOIS

COLLEGES AND UNIVERSITIES

1 Hedding College, M. E., Abingdon.
2 Illinois Wesleyan University, M.E., Bloomington.
3 St. Viateur's College, R. C., Bourbonnais.
4 Blackburn College Presb., Carlinville.
5 Carthage College, Luth., Carthage.
6 St. Ignatius College, R. C., Chicago.
7 St Stanislaus College, R. C. Chicago.
8 University of Chicago, Non-Sect., Chicago.
9 James Millikin University, Presb. Decatur.
10 Austin College, Non-Sect., Effingham.
11 Evangelical Proseminary, Ger. Evang., Elmhurst
12 Eureka College, Christian, Eureka.
13 Northwestern University, M E, Evanston.
14 Ewing College, Bapt., Ewing.
15 Northern Illinois College, Non-Sect., Fulton.
16 Knox College, Non-Sect., Galesburg.
17 Lombard College, Univ., Galesburg.
18 Greenville College, Free Meth., Greenville.
19 Illinois College, Non-Sect., Jacksonville.
20 Lake Forest College, Presb., Lake Forest.
21 McKendree College, M. E., Lebanon.
22 Lincoln College, Cumb. Presb., Lincoln.
23 Monmouth College, United Presb., Monmouth.
24 Northwestern College, Ev. Ass'n, Naperville.
25 St. Bede College, R. C., Peru.
26 St. Francis Solanus College, R. C., Quincy.
27 Augustana College, Luth., Rock Island.
28 St. Joseph's College, R. C., Teutopolis.
29 Shurtleff College, Bapt., Upper Alton.
30 University of Illinois, State, Urbana.
31 Westfield College, U. B., Westfield.
32 Wheaton College, Cong., Wheaton.

SCHOOLS OF TECHNOLOGY

33 Armour Institute of Technology, Chicago.
34 Lewis Institute, Chicago.
35 Bradley Polytechnic Institute, Peoria.

PUBLIC NORMAL SCHOOLS

36 Southern Illinois State Normal University, Carbondale.
37 Eastern Illinois State Normal School, Charleston.
38 Chicago Normal School, Chicago.
39 Northern Illinois State Normal School, Dekalb.
40 Illinois State Normal University, Normal.
41 Western Illinois State Normal School, Macomb.

Recognizing the value of thorough education, Illinois has established five normal schools for the instruction and training of teachers. The oldest is at Normal, and was one of the first schools of its kind in the

L. of C.

country. Others have been built at Carbondale, Charleston, DeKalb, and Macomb. These schools give instruction in every grade from the kindergarten up. They also admit high-school graduates and give them two years of professional training, part of which consists in the actual practice of teaching under skillful direction and criticism. The state contains 321 public high schools and 65 private secondary schools.

FIG. 53. *The Southern Illinois State Normal University at Carbondale.*

FIG. 51. *The Eastern Illinois State Normal School at Charleston*

FIG. 56. *The Northern Illinois State Normal School at DeKalb*

The free school system dates from 1855. There are now more than 12,700 public schools in the state, but more than 10,000 of these are ungraded country schools.

The school system of the state is organized under the State Superintendent and county superintendents who inspect each school. A state course of study has been adopted, and the school year has been lengthened until the average now exceeds 150 days.

There were in the state in 1900 1,388,000 persons between the ages of six and twenty-one, the so-called school age, and 76.9 per cent of these were in the public schools in charge of 20,303 teachers, the average attendance being 737,576. The daily attendance of children enrolled in the schools increased from 61 per cent in 1880 to nearly 77 per cent in 1900. In addition to the public school enrollment there were 142,196 children in private schools. Primary education is compulsory between the ages of six and fourteen.

FIG. 57. *The Western Illinois State Normal School at Macomb*

The annual cost of the public schools and educational institutions in the state in recent years has been about $20,000,000.

FIG. 57. *Main building, the Illinois State Normal University at Normal.*

partly canceled by the income from a permanent school fund that now amounts to nearly $18,000,000.

In addition to the state schools there are thirty-one schools classed as colleges and universities in Illinois, which are well distributed over the whole area of the state. Many of these institutions of higher learning were established by the early pioneers of the last century, and have been continual factors in uplifting education. Some of the largest of these universities have world-wide fame, as the University of Chicago at Chicago and Northwestern University at Evanston. (Figs. 43 and 50.)

FIG. 58. *General Grant Monument, by Louis T. Rebisso, in Lincoln Park.*

Technological schools known for special excellence are the Armour Institute of Technology and Lewis Institute, situated at Chicago, and the Bradley Polytechnic Institute at Peoria.

As a result of all this educational activity the state has an illiteracy record of only 4.2 per cent of the population of ten years of age or over. This places Illinois near the head of the list of states having little illiteracy, the average for the whole country being 10.7 per cent.

FIG. 59. *Looking up the beautiful Lake Shore Drive, Chicago.*

Table showing the rank of the leading manufacturing cities of Illinois.

Twelfth census of the United States, Vol. VIII.

RANK	CITY	VALUE OF ANNUAL MANUFACTURES	LARGEST INDUSTRY	PERCENTAGE OF TOTAL MANUFACTURES OF CITY
1	Chicago	$888,945,311	Slaughtering and meat packing	30
2	Peoria	48,871,596	Distilled liquors	54
3	East St. Louis	33,550,611	Foundry and machine shop products	4
4	Joliet	27,780,104	Iron and steel	40
5	Rockford	12,580,116	Furniture	14
6	Pekin	12,268,021	Distilled liquors	
7	Moline	10,000 282	Farm machinery	
8	Quincy	9,234,088	Foundry and machine shop products	17
9	Aurora	7,370,029	Foundry and machine shop products	24
10	Elgin	7,101,637	Cheese, butter, condensed milk	12
11	Springfield	6 612,286	Wood work	9
12	Decatur	5,896,492	Flouring and grist mill products	34

A GAZETTEER OF THE CITIES OF ILLINOIS

More than one-half of the people of Illinois reside in incorporated cities and towns of 4,000 population or over. In 1900 there were sixty-six such places in the state, all prosperous and growing. The large number and flourishing condition of these centers of activity are the natural results of: (1) the unusual fertility of the soil and the large percentage of the total area adapted to cultivation, two reasons for the enormous crops of corn, oats, hay, and fruits, which furnish great quantities of food products and support vast numbers of cattle, hogs, and horses (Dodge Figs. 250, 251, 253, 259, 260, 262, 263, 265, 267, 268, 269, 270, and 271); (2) the even surface which offers unusual advantages for building railways and common roads, giving the state, when built, highly efficient transportation service, and thus affording the people the best advantages for marketing their products; (3) the widespread and valuable deposits of coal, clay, sand, and building stone, which invite diversified manufacturing interests in nearly all the cities; and (4) the character of the people, who have come largely from the eastern states and northern Europe, and are the pick of energetic populations.

In the gazetteer which here follows the population of each city, town, and village is given in parentheses following the name of the place, all of the population figures being taken from the Twelfth Census of the United States.

Alton (14,210), a handsome city in Madison County, on a limestone bluff 200 feet above the Mississippi River, eight miles above the mouth of the Missouri, and twenty-five miles north of St. Louis, Mo., is the market for several counties and has excellent advantages for industry and trade. Valuable limestone is quarried in the vicinity, and coal is conveniently near. The town has flour mills, glass factories, the largest glass-bottle factory in the country, brickyards, limekilns, machine shops, shoe factories, and powder mills, and manufactures farm machinery, wagons, and carriages. Large quantities of fruit are shipped. Four railways center here. In Upper Alton, a suburb, is Shurtleff College, a coeducational institution founded in 1836.

Aurora (24,147), situated in the southeastern part of Kane County, thirty-seven miles southwest of Chicago on the Fox River, is in the most productive agricultural district in the state (Fig. 2.) Kendall, Kane, DeKalb, Will, and Dupage counties are largely tributary, commercially. It is connected with Chicago by three steam railroads and an electric railroad.

The city is on a belt line railway, reaching from Valparaiso, Ind., to Waukegan, Ill., and crossing every line entering Chicago, thus making it convenient to transship from one road to another without adding to the congestion of freight in Chicago. This gives Aurora a great commercial advantage, and as a result varied and extensive manufactures have been established. The river furnishes a large water power used in the factories. The manufactures include a stove factory said to be the largest in the world, foundries, machine shops, flour, woolen, and cotton mills, factories for the manufacture of carriages, wagons, sash, doors, and blinds, road-making machinery, paint, pianos, corsets, watch and bicycle materials, and silverware. Here are repair shops of the Chicago, Burlington & Quincy Railway. The city owns and operates its gas and electric plants and its water works.

Beardstown (4,827), Cass County, on the Illinois River, 112 miles north of St. Louis, Mo., and forty-six miles northwest of Springfield, Ill., has railroad repair shops, saw mills, a barrel, stave, and heading factory, shoe and button factories, flour mills, and breweries. It is in a fine agricultural region and the river affords valuable fishing.

Belleville (17,484), one of the leading cities of southern Illinois and the county seat of St. Clair County, is located fourteen miles southeast of St. Louis, with which it is connected by trolley. Coal from the extensive fields near by is delivered to the factories at less than a dollar a ton. This results in extensive manufacturing. It has more

than 100 factories manufacturing wrought iron, steel nails, tacks, stoves, and farm machinery. There are also extensive flour mills, breweries, distilleries, brickyards, and glass works.

Belvidere (6,937), the county seat of Boone County, on the Kishwaukee River, seventy-five miles northwest of Chicago, manufactures sewing machines, corsets, heaters, canned goods, and condensed milk. The dairy product is large.

Bloomington (23,286), the county seat of McLean County, 126 miles southwest of Chicago, is an important railway center. Coal is mined in the vicinity. Here are construction and repair shops of the Chicago & Alton Railway. Stoves, foundry products, trunks and valises, flour, furniture, sash, doors, and blinds are among the important manufactures. The city is in the heart of a rich agricultural region; in its vicinity is the largest nursery in the West. The breeding of fine cattle and horses is carried on in this region. Illinois Wesleyan University (M. E.) was established here in 1850. The Illinois State Normal University and the Soldiers' Orphans' Home are at Normal, two miles north. (Fig. 57.)

Blue Island (6,114), Cook County, south of Chicago, on the Calumet River, has three great railroads passing through it. There are quarries of limestone for building, large brickyards, some brewing and some smelting of copper ore.

Cairo (12,566), the county seat of Alexander County, is in the southern extremity of the state, at the junction of the Mississippi and Ohio rivers, 151 miles below St. Louis, 365 miles south of Chicago, and 547 miles from New Orleans. While it owed its early growth to the river traffic, which is still important, it has become a leading railroad center. The Ohio River is here crossed by a steel bridge built in 1888 at a cost of $3,000,000. (Fig. 37.) The town is protected by a levee, built at great expense. It is an important market for lumber, grain, and fruit; has flour mills, a sewing-machine factory, foundries, machine shops, and extensive woodworking and bottling establishments.

Canton (6,564), Fulton County, thirty miles southwest of Peoria, has large coal mines in the vicinity. Wood is abundant. Its manufactures include agricultural implements, foundry products, tile, paving brick, cigars, and cigar boxes.

Carbondale (3,318), Jackson County, ninety-five miles southeast of St. Louis, Mo., is the center of an important coal-mining district. The Southern Illinois State Normal University is located here. (Fig. 53.)

Centralia (6,721), Marion County, sixty miles east of St. Louis, Mo., is directly over extensive coal mines supplying cheap fuel to local factories. It manufactures envelopes, mining tools, and fruit boxes, and much fruit, raised in the vicinity, is shipped, especially large quantities of peaches, strawberries, and apples. Its railway facilities are excellent. The Illinois Central Railway has machine shops here.

Champaign (9,098), Champaign County, 128 miles southwest of Chicago, is situated in an extremely fertile farming region. It has manufactures of wagons, brick and tile, twine, and iron and steel goods.

Charleston (5,488), the county seat of Coles County, is in the midst of a rich farming region. It is the leading broom-corn market of the United States. Brooms, carriages, woolens, stoves, and tile are the chief manufactures. The Eastern Illinois State Normal School is here. (Fig. 54.)

Chicago (1,698,575), located near the head of Lake Michigan, was first visited by fur traders in 1654. In 1795 the Indians ceded a tract six miles square to the Government, and in 1803 Fort Dearborn was built. The first white settler was John Kinzie, a French Canadian, who made his home here in 1804. In 1812 the fort was burned by the Indians, and all the inhabitants, numbering about fifty, were massacred. In 1816 the fort was rebuilt, and a town sprang up which was incorporated as a city in 1837 with a population of about 4,000. Since that time Chicago has had a phenomenal growth, now ranking as the second largest city in the United States and the fifth city in size in the world.

Chicago is a natural outgrowth of the advantages of its position and of the resources which focus here. In the early history of the West the Great Lakes were the best highway to and from the East, and Chicago was the port where water transportation reached farthest into the heart of the rich agricultural plains. These advantages are still powerful factors in giving Chicago its supremacy. But even more important to-day is

the fact that Lake Michigan lies directly across the east and west lines of travel, forcing all east and west land traffic in the northern part of the United States to concentrate at the head of the lake. As that part of the country is most densely populated and since most of our traffic is along east and west lines, nearly one-half the area of the United States is tributary to Chicago.

When railways came, the level plains of the Middle West offered the easiest possible conditions for building, few grades and curves were necessary, and no expensive construction was required. Consequently the fertile prairies were rapidly covered with a network of steel roadways leading to Chicago, which has become the largest railway center in the world. The two factors, rapid transportation by land and cheap transportation by water, have given Chicago enormous advantages as a distributing center.

These advantages, position and transportation, have brought the coal fields of the state to the manufactories in the city, and the cheap water transportation of the lakes has brought the fields of Pennsylvania and Ohio almost as near. The timber and iron of the North have met the coal of the South and the East at the factory doors of Chicago, and a great variety and a vast quantity of manufactured products result. The unusually fertile agricultural regions lying immediately tributary to Chicago have millions of farm animals, which find a ready market each year at this great industrial center.

The city lies on an almost perfectly level plain, which was formerly the bed of the larger Lake Michigan. The streets are laid out in regular squares, running with the compass. There are 2,420 miles of streets, 808 miles of which are paved. The city water supply is taken from the Lake, intake tunnels extending from two to four miles out to the cribs where the pumping engines are placed. At the shore end of the intake tunnels are great pumping stations which furnish the pressure necessary to the city service. There are 480,000,000 gallons of water pumped into the city mains every day. Formerly the sewage of the city was discharged into the Lake, but as this endangered the city's water supply, a great drainage canal was planned which was completed in 1900, at a cost of $33,000,000. This canal reverses the flow of the Chicago River and takes 300,000 cubic feet of water per minute from Lake Michigan, thus carrying the sewage of Chicago into the Des Plaines River, and so down the Illinois into the Mississippi. This, the largest sanitary engineering feat ever attempted, was completely successful. The canal is available for navigation to Lockport, a distance of twenty-eight miles.

There is a wide variety of manufactures in the city, but slaughtering and packing are far in the lead with products valued at over $250,000,000 a year, which is nearly one-third the value of the city's manufactures. (Fig. 26.) Next in importance come foundry and machine-shop products and iron and steel. (Fig. 38.) The steel industries are largely centered at South Chicago. In ready-made clothing the city ranks next to New York, although its output is now worth a million dollars a week, the industry is increasing rapidly. Chicago leads the world in the manufacture of farm machinery, particularly harvesting machines, and more than one-half of the world's binder twine is made here. It ranks first in America in slaughtering and meat-packing, in foundry and machine-shop products, and cars, second in men's clothing, malt liquors, newspaper and book printing, lumber products, including sash, doors, and blinds, and furniture.

Chicago covers an area of about 190 square miles and has a water front on Lake Michigan of about twenty-five miles. The Chicago River, since the completion of the drainage canal an outlet of the Lake, has a frontage of sixty miles in the city, more than one-third of which is available for wharfage. (Figs. 23 and 34.) The river is crossed by many bridges, the most interesting of which are the rolling lift or bascule bridges which open like a jackknife to leave the channel clear (Fig. 35), the cable cars pass under the river through tunnels. The harbor, formed by an artificial breakwater, has an area of about 450 acres and a depth of sixteen feet.

Chicago is second only to New York in the large number, the size, and the extreme height of office buildings, the so-called sky scrapers which originated here. The frame work of the buildings is planted upon steel encased in concrete. The tallest of these is the Masonic

Temple, twenty-one stories in height; the largest is the Auditorium, which contains a great hotel and one of the largest theaters in the world.

The city is justly famous for its parks, which have an area of more than 2,200 acres and are connected by boulevards. The parks and boulevards form a nearly complete chain around the heart of the city, providing about sixty-six miles of driveway within the city limits. (Fig. 59.) Some of the finest sculpture in the world adorns these parks, notably the statue of Lincoln by St. Gaudens and the Grant monument by Rebisso. (Figs. 49 and 58.)

Chicago Heights (5,100), Cook County, is a manufacturing suburb of Chicago, twenty-five miles south of the city, on a slightly rolling glacial moraine. It is on a belt railway, which crosses all railroads entering Chicago and gives Chicago Heights excellent advantages in handling freight. The manufactures include iron and steel goods, railway cars, locomotives, railway supplies, machinery, wagons, building materials, pianos and organs, chemicals, school supplies, and glassware.

Clinton (4,452), the county seat of Dewitt County, is twenty-two miles south of Bloomington, on the Illinois Central Railroad. It has railway repair shops and varied industries.

Collinsville (4,021), Madison County, is twelve miles northeast of St. Louis, Mo., with which it is connected by trolley. There are coal mines, brickkilns, zinc smelters, and lead works near by.

Danville (16,354), the county seat of Vermilion County, is on the Vermilion River, 124 miles south of Chicago. Coal is mined extensively near by. The Kellyville field near the city puts out more than a million and a half tons a year. The river furnishes water power The machine shops of the Chicago & Eastern Illinois Railroad are here. The city has extensive manufactures of iron, galvanized iron, wagons, brick, woolens, flour, hominy, and beer. It lies in the richest part of the corn belt, three adjacent counties producing more than 50,000,000 bushels of corn per year. (Fig. 20.) Here is a National Soldiers' Home.

Decatur (20,754), the county seat of Macon County, on the north bank of the Sangamon River, thirty-nine miles east of Springfield, is an important railway center. It is in the midst of a rich farming area. There are two coal mines in the city. It manufactures engines, farm implements, iron bridges, tile, brick, artificial stone, coffins, carriages, furniture, plumbing goods, gas and electric fixtures, mantles, soda fountains, clothing, bagging, beer, flour, and corn products. It is the site of James Milliken University.

Dekalb (5,904), Dekalb County, fifty-eight miles west of Chicago, is in a rich farming and dairying region (Figs. 28 and 29) with good transportation facilities. Its wire fence industry is one of the largest in America. Other manufactures include farm implements, nails, shoes, gloves, pianos, flour, cheese, and butter. It is the seat of the Northern Illinois State Normal School. (Fig. 56.)

Dixon (7,917), the county seat of Lee County, is on the Rock River, ninety-eight miles west of Chicago, in a region famous for dairy products. Its condensed milk factory is the largest in the world. The river yields 5,000 horse power, the dam giving slack water for twelve miles back. The manufactures include foundry and wire products, plows, wooden ware, wagons, boots and shoes, boxes, and condensed milk. A private normal and training school located here is well and favorably known.

Duquoin (4,353), Perry County, seventy-one miles southeast of St. Louis, Mo., has twelve companies that mine coal near by, and an extensive salt-making plant. It also has iron and pump works, veneer factories, and an ice plant.

East St. Louis (29,655), St. Clair County, on the Mississippi River opposite St. Louis, Mo., is the focus of twelve railways which cross the river here on great steel bridges. (Fig. 39.) The manufactures include malleable iron, rolling mill and foundry products, bolts and nuts, nails, cars, glass, chemicals, white lead, castor oil, syrup, paint, barrels, flour, and beer. Here is one of the largest stock yards in America, with extensive slaughtering and meat-packing interests.

Edwardsville (4,157), the county seat of Madison County, twenty miles northeast of St. Louis, Mo., is largely engaged in coal mining. The manufactures include brick, carriages, plumbers' goods, plows, and flour.

Elgin (22,433), Kane County, on Fox River thirty-five miles northwest of Chicago, is in the

richest dairying region in America. It is the leading butter-producing city of the United States, and has large condensed milk factories. Extensive water power is furnished by the river. The city is world-renowned for its watches. Other manufactures are foundry and machine-shop products, windmills, silver plate, soap, boots and shoes, butter tubs, liquors, pipe organs, flour, books, and periodicals. (Fig. 36.) The Northern Hospital for the Insane is here.

Evanston (19,259), Cook County, on Lake Michigan, joins Chicago on the north and is one of the most attractive residence centers adjacent to that city. It is widely known for its excellent schools and especially as the seat of Northwestern University, founded in 1854, the most famous Methodist Episcopal College in the country. (Fig. 50.) The sale of liquors is prohibited within four miles of the University. It is one of the most orderly cities in the United States.

Freeport (13,258), the county seat of Stephenson County, is located on the Pecatonica River, 125 miles northwest of Chicago. It manufactures wagons, hardware, windmills, pumps, boots, shoes, musical instruments, and canned goods.

Galena (5,005), the county seat of Jo Daviess County, seventeen miles southeast of Dubuque, Iowa, has a picturesque location on the Galena River, six miles from the Mississippi. The town is built upon the bluff which drops down in terraces to the Galena River. The Mississippi River steamboats ascend the Galena to this point. The place was settled early, and its history is closely connected with the production of lead, its name, in fact, being that of the ore mined in the limestone bluffs in the vicinity. There are manufactures of lead and zinc, wooden ware, furniture, and boots and shoes.

Galesburg (18,607), the county seat of Knox County, is in the midst of fertile prairies. The abundant coal in the vicinity invites manufacturing. The leading products are paving brick, brooms, typewriters, corn planters, and other machinery. Its railway facilities are excellent. Here are repair shops of the Chicago, Burlington & Quincy Railway. The town is an educational center, having two old established colleges, Lombard College (Univ.), founded in 1852, and Knox College (non-sect.), founded in 1837.

Harlem (4,085), Cook County, joins Chicago on the west. It is a residence rather than an industrial town, but it has no separate city or village government, forming a part of the township of Proviso.

Harvey (5,395), Cook County, twenty miles south of Chicago, is an important manufacturing suburb. It is a new town of rapid growth, well planned, with a residence district separate from the factories. There are extensive manufactures of railroad supplies, machinery, stoves, engines, foundry products, and artificial stone.

Jacksonville (15,078), the county seat of Morgan County, is located on a fertile prairie, ninety miles north of St. Louis, Mo. It has excellent railway facilities and manufactures boilers, tile, brick, and woolens. The city is best known as an educational center. It is the seat of Illinois College, Illinois Woman's College, a Conservatory of Music, state schools for the deaf, dumb, and blind, and the Illinois State Central Hospital for the Insane. The city is well built and the streets are shaded by fine elm and maple trees.

Joliet (29,353), the county seat of Will County, is on the Des Plaines River, thirty-seven miles southwest of Chicago. The river furnishes a large water power. Limestone in the vicinity, valuable as building material, is quarried extensively. The railway facilities are of the best. Here is one of the largest steel plants in the country and extensive rolling mills. The manufactures include iron and steel products, wooden ware, marble and stone products, brick, tile, farming implements, wire products, boots and shoes, flour, breakfast foods, beer, and paints. The State Penitentiary, a magnificent structure of local stone, costing nearly a million dollars, is located here. The city has a number of parks and playgrounds. Electric cars run to Chicago.

Kankakee (13,595), the county seat of Kankakee County, on the Kankakee River, is fifty-six miles south of Chicago. It lies in a wide plain or lowland, formerly the bed of one of the great glacial lakes. The soil of this fertile lowland is now largely drained and reclaimed for agriculture. The railway facilities are excellent. Near by is an almost inexhaustible supply of limestone suitable for building. The river is navigable for

small boats. The manufactures include carriages plows, nails, furniture, musical instruments, sewing machines, brick, tile, and flour. Here is the Eastern Illinois Hospital for the Insane. The buildings cost $2,000,000 and house over 2,000 patients.

Kewanee (8,382), in Henry County, 132 miles southwest of Chicago, is in a productive farming region. The manufactures include tubing, boilers, steam heaters, farming machinery, gloves, mittens, and brick and tile.

La Salle (10,446), La Salle County, ninety-nine miles southwest of Chicago, is beautifully situated on the north bank of the Illinois River, along a series of terraces rising from the stream to the plain 250 feet above. Steamboats ascend the river to this point. The bluffs furnish fine building stone and sandstone for the manufacture of glass. Coal mines underlie the city. This affords exceptional advantages for the manufacture of Portland cement, pressed brick, sheet zinc, spelter, sulphuric acid, and clocks.

Lincoln (8,962), the county seat of Logan County, twenty-nine miles northeast of Springfield, is in a rich farming region underlaid with coal. The manufactures are rolling-mill products, caskets, horse collars, and mattresses. Lincoln College (Cumb. Presb.), the State Institution for Feeble-Minded Children, and the Odd Fellows' Orphans' Home are located here.

Litchfield (5,918), Montgomery County, fifty miles northeast of St. Louis, Mo., is in a fertile, undulating prairie where coal and oil are found. Machinery, cars, engines, radiators, flour, and glassware are manufactured.

Macomb (5,375), the county seat of McDonough County, manufactures pottery, brick, tiles, drain pipe, and castings. The Western Illinois State Normal School is here. (Fig. 55.)

Mattoon (9,622), Coles County, at the intersection of three railway lines, has extensive railway repair shops, and manufactures engines, pumps, brooms, brick and tile. It is in the richest broom-corn area in the country and ships large quantities of the brush.

Maywood (4,532), Cook County, on the Des Plaines River, ten miles west of Chicago, has extensive tin-can factories.

Metropolis (4,069), the county seat of Massac County, forty miles above Cairo, on the Ohio River, manufactures brick, pottery, lumber products, plow handles, staves, headings, boats, wagon materials, and flour. It has well-paved streets above the highest floods.

Moline (17,248), Rock Island County, is situated on the south bank of the Mississippi River, and joins the city of Rock Island on the west. A narrow channel separating Moline from the island of Rock Island, furnishes fine water power, used jointly by Moline and the United States Government. The Government has a great arsenal and a small-arms factory on the Island. Four railways converge here, and the Mississippi River is bridged at this point. An almost inexhaustible supply of coal is found in the adjacent hills. With matchless transportation facilities by river and by rail, and abundant fuel close at hand, extensive manufacturing naturally results. Agricultural implements, including plows and corn planters, with wagons, pumps, and gasoline engines, are the leading manufactures; others are rolling-mill, machine-shop, and foundry products brick and tile, organs, pianos, scales, furniture, paper, and dressed lumber. The town is public spirited and progressive, and its natural advantages fully justify a belief in its future greatness.

Monmouth (7,460), the county seat of Warren County, lies in a prairie region of great fertility. Coal is mined near by. The manufactures include pottery, sewer pipe, brick, machinery, hardware, plows, and cultivators. Monmouth College (United Presb.) is located here.

Morris (4,273), the county seat of Grundy County, is situated on the Illinois River sixty-two miles southwest of Chicago. The manufactures include brick and tile, hardware, strawboard, leather, and rolled oats. On Mazon Creek, near by, are the famous beds of carboniferous fossil ferns and insects.

Mount Carmel (4,311), the county seat of Wabash County, on the Wabash River, at the mouth of the White, has abundant water power. Here are repair shops of the Big Four Route. The manufactures include dressed lumber, furniture, wooden ware, strawboard, and flour.

Mount Vernon (5,216), the county seat of Jefferson County, manufactures railway cars brick and tile, flour, and railway ties which are

preserved by a chemical process. Fruits are grown, and coal is mined in the vicinity.

Murphysboro (6,463), county seat of Jackson County, is on the Big Muddy River, fifty-seven miles north of Cairo. Coal is mined near by. It has railway machine shops, brickyards, a cooperage plant, a brewery, and flour mills. Much fruit is raised, canned, and shipped in this region.

Oak Park (12,000), Cook County, joins Chicago on the west and is closely connected by railroads with the business center of that city. It is a very attractive residence village and is one of the oldest settlements around Chicago. Previous to the adoption of its present name, it was known successively as Kettlestring's Grove, Oak Ridge, Harlem, and Noyesville.

Olney (4,260), the county seat of Richland County, manufactures brick, tile, and flour. Much fruit is raised near by. Here is a cold-storage plant; canning is an important industry.

Ottawa (10,588), the county seat of La Salle County, at the junction of the Fox and the Illinois rivers, eighty-four miles southwest of Chicago, has excellent water power. Coal is mined near by and sandstone is quarried and used largely in glass factories. Good clay and shale invite the manufacture of pottery, terra cotta, drain tile, and brick. Among other manufactures are agricultural implements, wagons, carriages, and musical instruments.

Pana (5,530), Christian County, forty-two miles southeast of Springfield, is in a rich stock-raising region, and is a leading coal-mining center.

Paris (6,105), the county seat of Edgar County, is an agricultural center. It has manufactures of brooms, street cars, and glass, and ships large quantities of broom-corn brush.

Pekin (8,420), the county seat of Tazewell County, is located on the Illinois River, ten miles south of Peoria. It is the focus of seven railways. Coal is extensively mined, some mines being within the city limits. The city has two large distilleries, and manufactures wagons, plows, reapers, barrels, glucose, starch, and chemicals.

Peoria (56,100), the county seat of Peoria County, on the west bank of the Illinois River, 160 miles southwest of Chicago, has, next to Chicago, the best railway service in the state, and also has steamboat lines to St. Louis. The tributary country is underlaid with coal and is the richest corn-producing area in the world. While Peoria is a great live-stock and grain market, it is best known for its manufacture of secondary products of corn. Its elevators hold millions of bushels. Its distilleries are the largest in the world, the internal revenue collected from them amounts to more than $25,000,000 a year. Large factories make starch, glucose, breakfast foods, and a score of other products from corn. The manufacture of spirits invites the manufacture of drugs and chemicals. Coal and shale lead to the production of pottery, brick, and tile. Agricultural implements, foundry and machine-shop products, strawboard, paper, cordage, and flour are produced. Bradley Polytechnic Institute takes its name from a public-spirited citizen who gave a large part of her fortune to endow this school for the technical training of youth. Here is the State Asylum for the Incurable Insane.

Peru (6,803), La Salle County, 100 miles southwest of Chicago, is on the north bank of the Illinois River, at the head of navigation, and has regular lines of steamboats to St. Louis. Coal is mined largely in the vicinity. The manufactures include zinc, plows, wheels, agricultural implements, gasoline engines, clocks, beer, pumps, boilers, scales, and fertilizers. Here is St. Bede College (R. C.).

Pontiac (4,266), the county seat of Livingston County, is on the Vermilion River, ninety-three miles southwest of Chicago. It manufactures shoes, lounges, candy, and boxes. The Illinois State Reformatory for Juvenile Offenders is here.

Princeton (4,023), the county seat of Bureau County, 105 miles southwest of Chicago, is in a rich farming and coal-mining region. Carriages, brick, and tile are manufactured, but the mercantile interests are chiefly connected with butter, cheese, fruit, and flour. Near by are extensive nurseries. The farmers are engaged largely in the breeding of fine stock.

Quincy (36,252), the county seat of Adams County, on the Mississippi, has fine transportation both by railway and river. The region roundabout is rich in coal and building stone and produces much fruit. The manufactures include stoves, farm machinery, machine shop products,

AUG 14 1905

carriages and wagons, pumps, wire work, incubators, egg cases, boxes, trunks, refrigerators, sash, doors, and blinds, show cases, furniture, organs, soap, beer, harness, paper, strawboard, and tobacco. A State Soldiers' and Sailors' Home is located here. It is the seat of St Francis Solanus College (R. C.).

Rockford (31,051), the county seat of Winnebago County, eighty-seven miles west of Chicago, on Rock River, is in the midst of a rich farming region and has excellent transportation facilities. The manufactures include machinery, farming implements, gas stoves, furniture, wooden ware, watches, flour, hosiery, gloves, mittens, paper, and beer. Here is Rockford College, a school for women.

Rock Island (19,493), the county seat of Rock Island County, is situated on the Mississippi River, opposite Davenport, Iowa. The river is spanned here by a double-decked steel bridge for both railways and carriages, erected by the Federal Government at a cost of $1,300,000. The island of Rock Island, separated from the city by a narrow channel of the river, is occupied by the Government Armory and Arsenal, the largest in the country. It occupies ten massive stone buildings and cost more than $10,000,000. Coal is mined near by, and there is unlimited limestone for building purposes. The manufactures include brick, stoves, carriages, farm machinery, sash, doors, and blinds, lumber, soap, and beer. It is the site of Augustana College (Luth.).

Springfield (34,159), the capital of Illinois and the county seat of Sangamon County, is situated 185 miles southwest of Chicago. It was settled in 1819 and became the capital in 1837. It is laid out regularly, with the public square and courthouse in the center. The State Capitol is one of the finest buildings in the West and cost more than $5,000,000. (Fig. 48.) The city is surrounded by fertile prairies underlaid with coal the annual output of the mines reaching nearly two and one-half million tons. Rolling-mill products, agricultural implements, engines, boilers, lumber products, flour, shoes, and paving brick are among the manufactures. The city is the greatest live-stock center in America. It is the headquarters of ten national live-stock associations. The State Fair is permanently located here. Springfield was the home of Abraham Lincoln and contains a beautiful monument to his memory. It was erected at a cost of more than $200,000 by popular subscriptions from the citizens of various states.

Spring Valley (6,214), Bureau County, is a railway center and one of the leading coal-mining towns of the West.

Sterling (6,309), Whiteside County, is finely located on the north bank of the Rock River. The river furnishes abundant water power for manufactures of agricultural implements, engines, pumps, hearses, coffins, and paper.

Streator (14,079), La Salle County, on the Vermilion River, ninety-six miles southwest of Chicago, is in the center of the Vermilion coal fields. A fine grade of steam coal is mined extensively. Foundry and machine-shop products, glass, brick, and tile are manufactured. There is a park of thirteen acres in the center of the town.

Taylorville (4,248), the county seat of Christian County, is on the south fork of the Sangamon, twenty-six miles southeast of Springfield, in the same rich prairie region. The live-stock industry is important in the vicinity. It has an almost inexhaustible coal supply owned and mined by home capital. The chief manufactures are paper, books, periodicals, brick, and tile.

Urbana (5,728), the county seat of Champaign County, 128 miles south of Chicago, joins the city of Champaign on the east. It is best known as the seat of the University of Illinois, opened in 1868, and now one of the most promising educational centers in the country; women were admitted in 1871. The campus covers 623 acres and is widely known for its beauty. (Fig. 51.)

Waukegan (9,426), the county seat of Lake County, is on the shore of Lake Michigan, thirty-five miles north of Chicago, the principal part of the town lying on a bluff above the lake. It is the terminus of a belt railway, which runs around Chicago to Valparaiso, Ind., crossing all railroads that enter Chicago, and thus giving Waukegan Chicago freight rates on all sides. This results in extensive manufactures, chief among which are steel wire, brass, scales, starch, sugar, glucose, leather goods, leather, oil, boats, sash, doors, and butter. It has valuable mineral springs.